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# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., JUNE, 1914

No. 6

## Farmers and Markets

Farmers all over the country, particularly in the Pacific Northwest, are realizing that they can sell more readily and get a larger proportion of what the consumer pays when there is unity of action on their own part and when the product offered is standardized. The berry industry in the Puyallup Valley could never have attained to its present magnitude if there had not been unity of purpose and action on the part of a large number of growers. The North Pa-

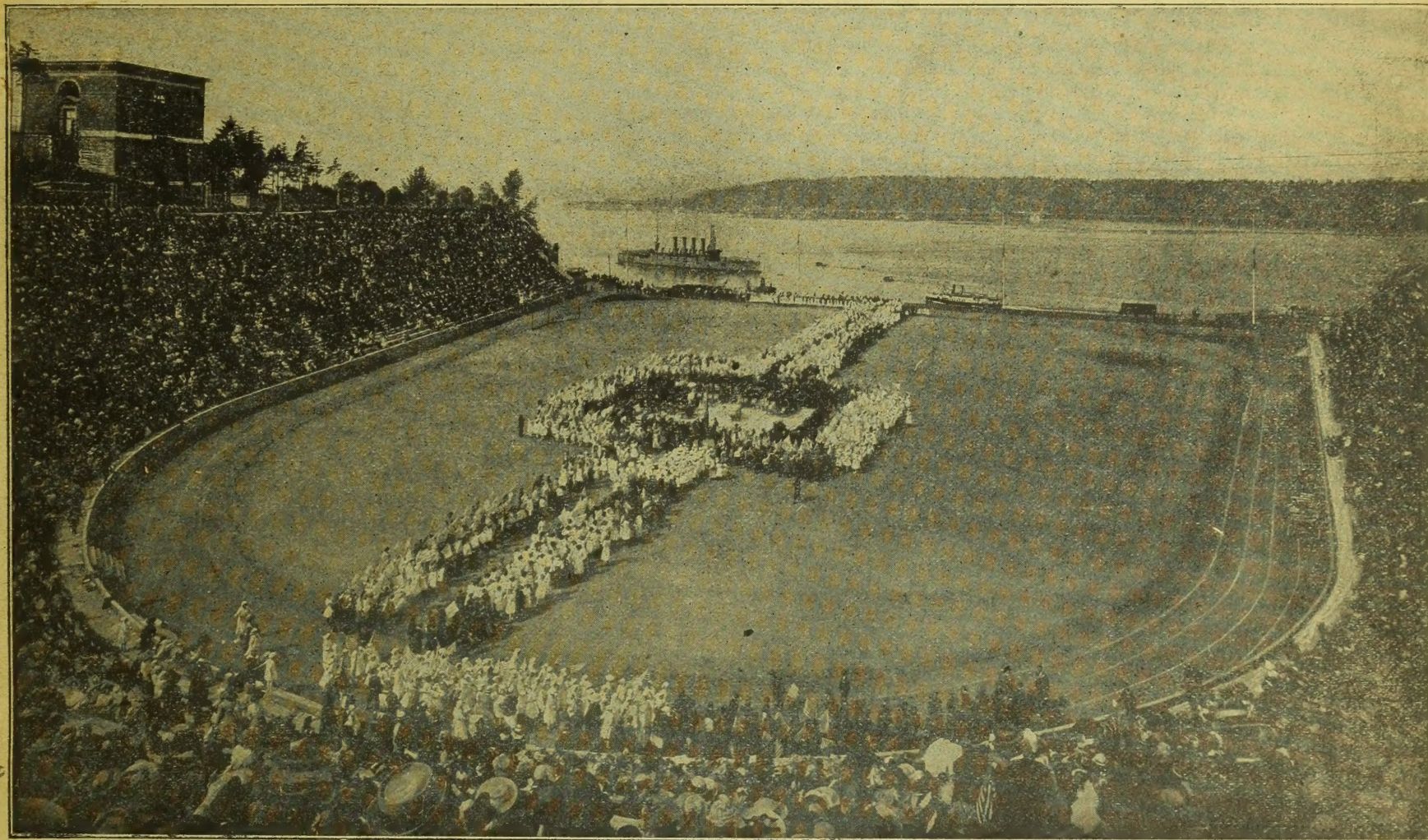
more money it would mean to the dairy farmers of this State if 75 per cent of the butter made would be equal in quality to that shown by the butter makers. It can be done if dairymen will get together in suitable groups, plan the work correctly and determine that their efforts shall succeed. Substantial promotion, backbone, grit and diplomacy are essential factors for co-operation. There are few communities but have men with these qualities in evidence. Farmers are being educated to harness these forces and to set them in motion, shown in many places by

try. It will cost something to get out of the old rut of indifference, to clean up, in order to make an article of high quality at the minimum of expense, but once an improved system has been adopted the cost of manufacture is no greater, while the market will become larger and satisfactory prices more steadily maintained. Mr. Henry T. Fink, states in "Good Housekeeping" that New York City alone consumes annually over \$65,000,000 worth of butter. In England the value of butter imports exceeds that of all other articles except wheat and sugar. For consumptives, and

Chief Harry Hayward, of the Bureau of Animal Industry, has declared that "a very small percentage of all dairy butter made is really of high grade." The time will perhaps come when more of our butter will be made from sweet cream but dairymen all over the country will benefit by working together in the aim for a higher quality and better butter.

## STANDARDIZING AND MARKETING.

The National Conference on Marketing and Farm Credits, which closes



The world-famed Tacoma Stadium, with 30,000 people, its picturesque setting is worth coming a long way to see. Great preparations are being made for the Montamara Festo celebration, July 3, 4 and 5. [Courtesy West Coast Trade.]

cific Fruit Distributors is another example of concerted efforts. For the past twenty years the way has been paved by frequent association of growers for the rapid strides this organization has made during the past two seasons. Its existence became an imperative necessity because the growers wanted to be in control of the marketing of their products and joined forces with that purpose in view. Last week the butter makers had an exhibition of a high scoring product taken from different creameries in the western part of the State, but all uniformly of high quality—a standard product. How much

their willingness to come together for specific industrial and business undertakings. Do farmers want a better market? The question is answered in a practical way by those who are willing to rise above little differences which may exist between residents of a community in order to gain that larger margin of profit which is otherwise wasted somewhere between the market and the producer.

## BETTER BUTTER.

Better butter a higher standard quality has become the watchword with leading dairymen all over this coun-

others who need toning up, butter is better than cod-liver oil. It is useful also in some forms of dyspepsia. An eminent physician once wrote that children should not have bread and butter, but butter and bread. You cannot give them too much of it—nor adults, either. We are a spare nation—Uncle Sam himself is always pictured as a lean gentleman—and we need more fat in our diet. Butter is the most digestible of all fats. We crave it instinctively; we eat more of it than does any other nation even now, but we would eat even greater quantities if it were made more tempting to the palate than it usually is.

ed its second session at Chicago recently, urges upon farmers to continue their efforts in the campaign for the standardization of packs, packages, carriers, and to seek the co-operation of the various interests employed in the promotion of this work.

The co-operative plan of marketing produce and other goods was endorsed and state acts recommended for the encouragement of such organizations, the protection of them against unfair discrimination, also such survey of the state markets and market conditions generally, information of same to be disseminated by marketing commissions.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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## LIBERTY UNDER AMERICAN FLAG.

If the A. B. C. mediators now at work in Canada have any idea of settling the troubles in Mexico without instituting political and religious liberty to the masses of the people they might as well change their tactics at once or go home. The stars and stripes fly over Vera Cruz at the cost and sacrifice of lives from the nation of which the flag is an emblem. It has always stood for liberty and justice with no uncertain backbone and it cannot consistently mean anything else for the people of Mexico. While in the Philippines an observer relates this fact: One day a representative of the "vanishing religious system" complained to the commanding general that the free schools and churches established by the people of the United States were causing a large percentage of the natives to become indifferent about payments he formerly had exacted of them. The U. S. army officer took him to the side of his office building and pointing to the dome over the city hall said: "Do you see that flag? Well, wherever you see the stars and stripes people worship and vote according to the dictates of their own conscience. Conflict if unavoidable, but there can be no compromise in the matter of liberty under the American flag."

## STANDARDIZE AND HARMONIZE.

Leading commission merchants are now ready for standardization of the commission business. They favor inspection under state supervision, realizing that such system will cause to be eliminated a large percent of those who for one reason or another do not handle the business properly. It will also serve to keep a better balance as to the number of merchants of this class required for the business in cities of specific sizes to handle it most economically.

Live commission merchants realize the fact as well as do producers and consumers that the distance or channel in which the merchants are a factor, is being reformed.

Just as fast as producers standard-

ize their products and adopt concerted methods in the marketing of them there will be less cause for waste in the commission merchant business and those who remain to carry it on will conduct it on a basis more satisfactory to themselves and to producers than has been the case in the past. Standardize and harmonize. The movement cannot be pushed too fast.

## PINT BOXES A DELUSION.

Pint berry boxes for the local markets have proved a delusion both to the grower and to the consumer. When the average laborer earning \$2 per day bought 3 boxes berries for 25 cents for his average family of six and found that his purchase was only two thirds as much fruit as that last year for the same price, he did not come back the next day for the second quarters worth. Instead he bought oranges, bananas and gelatine for the delicious desert for his family table. Think of it—2000 crates from Vashon with half as many more from some other point glutting the Seattle market a city of about 350,000 people, pint boxes in the crates at that. The cost of package and of handling is about the same as that of the short quart, so that in proportion to the amount of fruit actually handled the cost of getting it from the producer to the consumer has increased instead of decreased with the result that the demand decreased in like proportion. This was a rather funny experiment on the part of our legislature. So far as any benefit to either the producer or the consumer the pint cup is a delusion.

## MONTAMARA FESTO.

The Tacoma Carnival and Speedway Association is preparing for great celebration and automobile races in Tacoma July 3rd, 4th and 5th. The speedway association offers \$10,500 cash awards and is attracting leading automobile drivers of the country. On the nights of July 2nd and 3rd, a special program is arranged at the Tacoma Stadium, which seats over 30,000 people. The Stadium itself filled with people is worth coming a long way to see. Fireworks, music, colored torchlight procession, 260 performers lining up to form an American flag 65x100 feet are some of the attractions. The grand Stadium pyrotechnic display "Stromboli" is to be given at 8 p. m.

## Auto Races.

Friday, July 3rd, 10 a. m., Inter-City Century, 100 miles, perpetual challenge trophy, Tacoma Carnival Association and \$1,500 cash. 2 p. m. Golden Potlatch trophy, 200 miles, perpetual challenge trophy, by Seattle Carnival Association, and \$3,500 cash.

Saturday, July 4th, 2:30 p. m., Montamarathon trophy, 250 miles, trophy and \$5,500 cash.

## NURSERYMEN AND INSPECTION.

At the twelfth annual meeting of the Pacific Coast Association of Nurserymen, horticultural and experiment state officials will continue in co-operative work with the nurserymen to secure, so far as possible, uniformity of inspection laws covering nursery stock, orchards and orchard products. Efficiency of service in every department is the aim. Standardization has become the watchword with fruit growers, farmers, dairymen and nurserymen. When fixed standards of high quality in ev-

ery line of the plant and fruit industries have been established and made subject to uniform regulations, then much of what is now unnecessary waste can be avoided. Planters want trees free from pests and diseases and nurserymen realize they must meet that demand, but they don't like to propagate plants and trees conforming to sanitary requirements in the nursery and have the product held up at some distant point by officials who do not understand their duties. Nurserymen want inspection, but insist on thorough, efficient work both in the nursery and in the orchard. The interests of the nurserymen and that of the fruit growers are identical. Both require good uniform laws governing inspection and the standardizing of their products.

## LOGAN BERRY JUICE MANUFACTURE.

The commercial manufacture of loganberry juice is in its infancy, but Professor Lewis has conducted many experiments to justify the statements that approximately 80 per cent. of the berry can be converted into liquid. The machinery and processes in use making sweet apple juice or carbonated apple juice are found to answer the purpose in making the loganberry juice.

During 1914 the Salem Fruit Union will put up about five barrels of juice per day, the commercial article to then be advertised and sent out to the markets as a feeler.

The problem of labor for harvesting the loganberry has thus far been found to be of small moment. The picking season comes on as the schools of the state are closing for the year, and the loganberry fields have been found to be most attractive to women and children who like outdoor employment, light work and good pay while spending a Summer vacation. It requires from four to six pickers to handle an acre of fruit, and, coming just before the hop-picking season, the growers have been offered many more pickers than they could use. The price has been 1 cent per pound for picking.

## FRUIT DISTRIBUTORS AND BRAND

The North Pacific Fruit Distributors' organization requires no apology for its existence. The great majority of its membership is well satisfied with what has been accomplished during the past two years. Just as soon as producers affiliated with it are ready to unite on a brand under which fruit from any of its districts can be standardized and packed, will there be a little larger margin of profit than can be obtained from handling a multiplicity of brands. The advertising becomes an easier matter and the entire output can be handled at less expense. This step naturally will be taken and the sooner done the easier for the managers and the better the returns to growers.

## AGRICULTURAL YEARBOOK.

The Yearbook of the United States Department of Agriculture for 1913 has just come from the presses and is now being distributed to Congressmen and to correspondents of the Department entitled to receive copies. The new volume differs in several respects from its predecessors. The articles that it contains are in general popular and instructive.

In addition to the Secretary's report there are 14 special articles by De-

partment experts and an appendix containing statistics of the principal crops; a table of the animals imported into the United States for breeding purposes for which certificates of pure breeding have been issued, and lists of the agricultural colleges and experiment stations in the United States together with the names of the state officials in charge of agriculture.

The book is illustrated by 54 full-page plates, of which a large number are reproduced in colors, and by 21 tables, maps, and line drawings.

## GRADING RULES FOR SUMMER FRUIT, PROPER MARKING.

The following rules generally prevailing with leading fruit growers in the Pacific Northwest are issued in a pamphlet form by the Wenatchee V. F. Grs. Assn.

In marking fruit packages, care shall be taken that all marks are placed in a neat manner in their proper place. The following rule shall be followed:

### Specimen End of Box

All marks shall be made with a rubber stamp.

Mismarked and unmarked packages, or those marked without conforming to the above rule will not be accepted at any of the warehouses of the Association.

### Picking.

All fruit shall be carefully picked at the proper stage of ripeness and laid (not dropped) into buckets and baskets or into bags that open at the bottom. No windfalls or fruit that drops from the tree from any cause shall be placed with the picked fruit.

When pouring fruit from the picking bucket or basket, into boxes, the bucket or basket shall be put down into the box until it rests upon the bottom of the box. The picker shall then place his hand over the fruit so as to let it into the box gently, that it may not in any way be bruised.

All wagons used for conveying the fruit from the orchard to the packing house and to the warehouse must be supplied with springs so that there will be no jar to injure the fruit, and tarpaulins or other covering shall be placed over the loads to keep out the heat, dust or rain. Unprotected loads will not be accepted. In loading and unloading wagons use the utmost care in handling packages to prevent bruising of contents.

### Cherries.

All cherries must be carefully picked with stems intact. They must be sound and perfect in every manner. Bings and Lamberts 9x9 and larger may be packed in Standard Association boxes. Pack as follows:

Sort carefully for facing as to size and color; place in neatly, one at a time, creased side down. Place in box so fruit will be in rows both ways. Great care should be used in grading and placing the fruit so rows will be perfectly straight. Filling in is of great importance. The fruit should be carefully placed in small quantities at a time. All corners must be carefully hand packed and boxes filled slightly above the top and rounded full. All cherry boxes shall be lined with paper. The bottom of each box shall be nailed to the middle partition. A box of cherries weighing less than 11½ pounds gross will not be accepted. All other cherries will be packed in berry crates containing twenty-four cups. Cups



must be faced by placing the cherries with the stems down and be filled full. Crates weighing less than 30 pounds gross will not be accepted.

#### Peaches.

Growers should remember that it takes from seven to fourteen days for peaches to arrive on the market, and all peaches should be picked accordingly.

**Fancy.**—There will be but one grade of peaches, Fancy. These shall be free from worms, scale diseases, blemishes, split pits and picking bruises. They shall be sound, firm, smooth, true to name and well colored for the variety. No Elberta, or other variety of Yellow Peach will be received smaller than 78 to the box, excepting Crawford's, which will be received up to 84 per box. Elbertas shall be packed on their sides. No Alexanders, Hale's Early and Triumphs or other variety of early peaches will be accepted smaller than 90 to the box. All peaches showing ripeness shall be plainly marked at both ends of each box with a rubber stamp, the word "Ripe." Unmarked and mismarked packages will not be accepted. Each grade and count shall be of uniform size, each peach neatly wrapped in paper, and boxes carefully and tightly packed suitable for long distance shipment.

Diagonal pack must be used in packing all sizes of peaches, sides to be solid. Each package shall be full so that the cover touches the tops of the peaches lightly.

**Suggestions.**—Use Association standard boxes of correct size. In making boxes, use four four-penny cement nails for each side, eight four-penny cement nails for bottoms, six four-penny nails for top, nailing through cleats only. Be careful in nailing that no points protrude.

#### Apricots, Plums and Prunes.

Growers should bear in mind that it takes from seven to fourteen days for Apricots, plums and prunes to reach the market and all fruit should be picked accordingly.

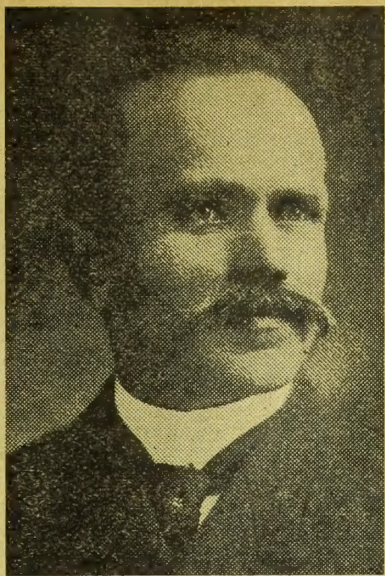
There will be two grades of Apricots, Plums and Prunes. Extra Fancy grade will consist of fruit packed 5x5 and larger, three tiers to the basket. Standard grade will consist of fruit packed 5x6 and 6x6 and shall contain four tiers to the basket, except Moorpark's, which must be packed tight. No Apricots, Plums and Prunes will be accepted smaller than 6x6. Fruit must be hand picked, sound and free from defects. Crates must weigh not less than 27 pounds gross. Unmarked and mismarked packages and those weighing less than the prescribed weight will not be accepted.

**Suggestions.**—In making crates, use four-penny nails on sides and bottoms. Nail through cleats on top with four-penny cement nails. Use no cleats on bottom. Use prune paper, 32x7½ inches, between each layer and over top.

#### Pears.

Name of variety, grade and number of pears shall be plainly stamped on end of each box; also grower's number.

**Extra Fancy.**—Bartlett, Buerre D'Anjou, Comice, Flemish Beauty, Buerre Clairgeau, Fall Butter and kindred varieties shall be no smaller than 2¼ inches in diameter. Winter Nelis pears must be no smaller than 1¾ inches in diameter. All pears must be packed in Association stand-



RICHARD LAYRITZ, Victoria, B. C.  
President Pacific Coast Association  
of Nurserymen

ard boxes and to weigh not less than fifty pounds gross to the box. All pears to be neatly wrapped in paper; shall be free from worms, worm stings, scale, picking bruises, blemishes and evidence of rough handling of any nature whatever.

**Standard.**—All fruit in this grade shall be sound, free from worms, worm stings, scale and diseases. Slightly misshaped pears or those having limb rubs or other slight defects may be included. No fruit less than 2¼ inches will be accepted. In fact, stock in this grade must be only a little below Fancy. Must be marked "Standard." Unmarked and mismarked packages and those weighing less than the prescribed weight will not be accepted.

**Suggestions.**—In making boxes, use eight five-penny cement nails on each side, eight five-penny cement nails on bottom and top, nailing through cleats only.

#### Summer Apples.

Pack only one grade of summer apples—Orchard Run. No small or imperfect fruit shall be packed. All apples shall be sound, free from worms, scale or defects. All apples shall be wrapped in paper and the boxes marked with grower's number, grade and variety and the number of apples in the prescribed manner. Unmarked and mismarked packages and those containing more than 175 apples to the box will not be accepted except Red June and Yellow Transparent and Jeffries, which shall be accepted as small as 200.

Crab Apples shall be packed in Association Standard apple boxes and boxes lined.

WENATCHEE VALLEY FRUIT  
GROWERS' ASSOCIATION.

By Order of Board of Directors.

#### CAULIFLOWER IN COAST SECTION.

##### Grown Out Doors the Year Through.

Cauliflower that will grow out of doors all the year and that matures before the Christmas holiday season, has been grown by Professor John W. Hotson of the department of botany in the University of Washington, after continued experiments.

Four varieties of the species have been found, all of them belonging to the family of broccoli. The seed, which Professor Hotson got from England, is planted out of doors about May 1, is transplanted again

## The Scandinavian American Bank

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Twenty-eight years without change of management, and every demand unequivocally paid with Legal Tender. Distinctly a Farmers' Bank with thousands of farmers for its customers.  
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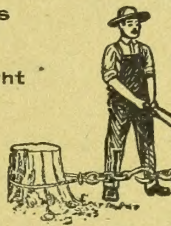
### When Attending the Montamara Festo

AND AUTO SPEED EXHIBITIONS in TACOMA, JULY 3-5, you are invited to call at Tacoma's Big Hardware Store and examine their complete line of things used on the farm. High in quality, reasonable in prices. Remember—

Mohr Has It,

1141-1143 C Street, Tacoma

Costs  
Only  
\$30  
Freight  
Paid



#### One Man Stump Puller

One man does the work—no horses needed. Weight 90 pounds. You can clear half an acre a day. Send for folder. Live agents wanted.

W. E. MORRISON, Dept. H  
821 Riverside Ave. Spokane, Wash.

## Farmers and Fruit Growers

When attending the Montamara Festivities at Tacoma July 3-5, you are invited to examine the latest and best labor-saving tools and implements which manufacturers have put on the market and suited to this section. Quality is our motto.

### Poole's Seed & Implement Co.

1507-9 Pacific Ave.

TACOMA, WASH.

the middle of June, and matures for the first time about December 15. The second date of maturity is some time in January.

The advantage in growing this vegetable, according to Professor Hotson, is that the use of greenhouse or hotbed facilities is obviated, all the growth taking place naturally under outdoor conditions. Professor Hotson says the vegetable thrives excellently in the Puget Sound climate.

#### PRE-COOLING BERRIES FOR SHIPMENT.

Berries for eastern shipment at Puyallup are pre-cooled with air run through pipes into the loaded car from the pre-cooling room which measures 4½x13x28 feet, containing 3,000 feet of 2-inch pipe, through which the brine from the ice plant is run.

A temperature of 40 degrees below zero is maintained in the pre-cooling room. Fans in the pipes leading to the cars below the cold air from the room into the cars. The fans, operated by a 15-horsepower motor, blow the air into the berry cars at a rate of 600 cubic feet a minute. The fan in one pipe is run for about an hour and then it is stopped and the other fan started, giving an alternating draft. The air is blown into the cars between two and three hours, or until the temperature of the car has dropped to slightly

above freezing, when the cars are sealed and shipped.

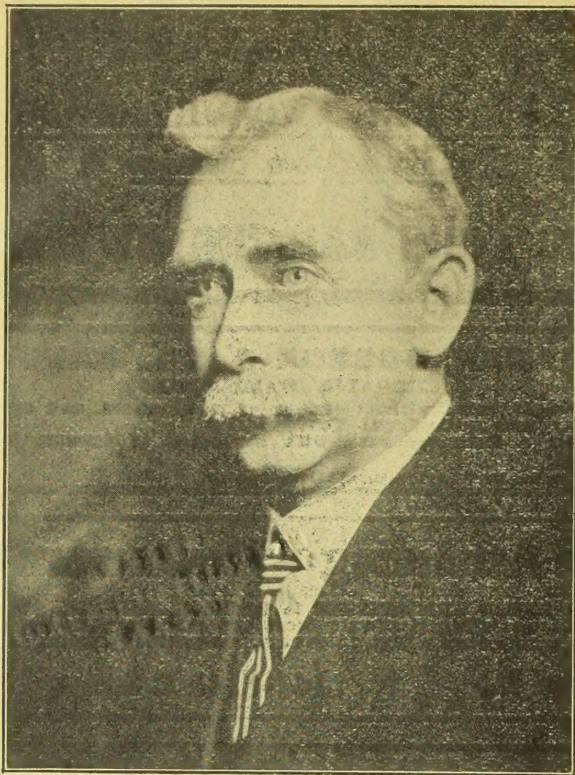
By pre-cooling the ripening process of the berries is stopped, giving about three extra days in transit. This process opens a much larger market to the local shippers, as the berries may be shipped without fear of spoiling to the far Eastern points. Without the use of precooling process the Mississippi river has been a far East deadline for the Puget Sound berry shipments.

The pre-cooling plant was built by Blodgett Brothers, formerly of Auburn, to handle the Puyallup & Summer Fruit Growers' Association shipments.

#### POLLINATION OF THE CHERRY.

The division of Horticulture of the Oregon Agriculture College has recently issued a very interesting bulletin on pollination, entitled "A Preliminary Report of the Pollination of the Sweet Cherry." The bulletin was written by Professor V. R. Gardner, associate pomologist of that institution. The work covers a period of three years undertaken in such places as Eugene, Corvallis, Salem and The Dalles. The Bulletin takes up something of the relative importance of the cherry pollination problem in Oregon and points out why





CHAS. L. TROTTER, Vancouver, B. C.  
Chairman Executive Committee Pacific Coast Association of Nurserymen

this problem has become acute. It takes up in detail the experiments which they have been conducting. The bulletin is very complete and well tabulated. The most startling points brought out are that out of a large number of cherries that are grown in the state, the Bing, Lambert, Napoleon (known as Royal Ann) are not only sterile but are intersterile; that is, they will not set fruit with their own pollen. It was shown, however, that when Black Republican, Black Tartarian and Waterhouse were set with these varieties very satisfactory results were obtained. It would seem from the information secured that it would be unsafe to plant orchards which contain nothing but Bing, Lambert and Napoleon. It was found that all sweet varieties tested were self-sterile; that other good pollenizers than those mentioned are Elton, Wood, Coe, Major Francis Early Purple. It

was also found that seedling trees that are found in cherry districts are efficient pollenizers for the leading varieties. A very interesting thing found was that the Duke group of cherries are capable of pollenizing some of the Bigarreus and at least some of the varieties of sour cherries are capable of pollenizing some of the Bigarreus.

The bulletin is splendidly illustrated, having in the back a series of plates showing the fruit secured from the various crosses. This bulletin will be mailed free to all in Oregon who are especially interested in this subject and a limited number of copies will be distributed in other portions of the United States. [The process of pollination of the different fruits seems to require more attention in a humid atmosphere like that of the coast section than is the case where there is less dampness during the blossoming period.]

## AGRICULTURE

## The Basis of Prosperity

### BUTTER, EGG AND POULTRY PRICES.

#### Prices Paid Farmers for Butter, Eggs and Chickens in May.

The crop reports of the Bureau of Statistics (Crop Estimates) of the U. S. Department of Agriculture show the average prices paid to the farmers in various States for butter, eggs, and chickens, and May 1, 1914, and as compared with the similar estimates on May 1, 1913. Apparently farmers are obtaining on an average less for their butter, and slightly more for their eggs and chickens.

#### Butter.

The average price paid to the farmer for butter on May 1, 1914, was 23.8c or 3.2c less a pound than the average price paid on May 1, 1913.

#### Eggs.

The farm prices for eggs on May 1 were 16.8c a dozen or about .7c higher on an average for the country

than on May 1, 1913, or an increase of about 4.3 per cent. In most of the States the price was the same, or varied only by 1c one way or the other. In Montana, however, eggs on May 1, 1914, were 18c or 4c cheaper than the preceding year, while in New Mexico they were 23c or 4c higher on an average.

#### Chickens.

The price paid to farmers for chickens on May 1 was 12.5 or about .7c a pound higher in 1914 than in 1913, or an increase of about 5.9 per cent. The variation in the price of chickens was commonly less than 1c per pound. The principal variations from this were Delaware, where there was a decrease of 1½c a pound to 14.5c, West Virginia where there was an increase of 1.2c a pound to 13.4c, North Carolina an increase of 1.5c to 12.5c and South Carolina an increase of 2.3c to 15c.

# Montamara Festo Visitors

Are cordially invited to take advantage of our garage and headquarters while in Tacoma. Every convenience for the storage of cars, repairing, adjusting and washing will be found here at

## Motor Headquarters

There will be stenographers, writing desks and courteous attendants at your command.

And then—you can inspect the newest motor vehicle on the market—the new 3,000-lb. B. A. Gramm Truck. This, in itself will more than justify your trip to Tacoma.

All prices will remain at regular schedule. It is our desire to be truly your host.

## Gramm-Bernstein Motor Truck Co.

Northwest Factory Branch

Tacoma, Washington

Corner 7th and C Sts.

Phone Main 3328

## "CORONA DRY"

### Arsenate of Lead

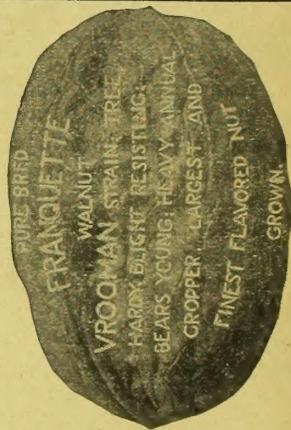
Patented June 10, 1913

Eliminates guesswork. - Standardizes the strength of the spray mixture. Saves work in mixing—no straining needed.

Spray with a mixture that *always* has the same strength. You cannot use a paste arsenate and be sure of uniform strength. *Large and practical usage in all sections, for all purposes, has proved that in "Corona Dry," you do get this very thing plus highest poisoning power, and absolute safety from "burning."*

### Largest and Most Progressive Growers Everywhere

say that "Corona Dry" has proved efficient—has always the same high efficiency—is more simple, cleaner and easier to handle than a paste material—is easily mixed and needs no straining—can be measured easily and correctly. "Corona Dry" positively kills and exterminates *Coddling Moth, Curculio and all leaf-eating insects* of both fruit and shade trees. One pound of "Corona Dry" will do the work of three pounds of paste and do it better. Write for booklet. Ask for Corona "Tree Insurance" Policy. Address CORONA CHEMICAL CO. Dept. D, Milwaukee, Wisconsin



## Walnuts in the Yakima Valley

Mr. J. B. Elliott, of North Yakima, Wash., writes us:

"I have six walnut trees eight years old which have borne a fine crop of nuts for the past two years. When these trees were two years old the temperature dropped to 20 degrees below zero, killing peach trees at my place, but the walnut trees came through uninjured. If I had the land, I would plant a commercial walnut orchard, as I believe the walnut is going to be a winner in this valley." The essential feature in a successful walnut is hardiness, size, quality of meat and regular annual bearing tendencies. All of these characteristics are found in the VROOMAN PURE STRAIN FRANQUETTE, unquestionably the leading walnut for the Northwest. Are profitable for nuts, or useful as shade trees. Write today for our free, handsome, illustrated booklet, giving full and reliable walnut information.

### OREGON NURSERY CO.

Oronco, Oregon

Competent salesmen wanted.

## Nursery Stock

### FRUIT TREES

### SMALL FRUITS

### ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY

F. J. Rupert, Mgr.

SALEM

OREGON

Please mention this paper



## Grange Master's Message

C. B. Kegley's annual address before Washington State Grange, North Yakima is supposed to express the consensus of opinion of members of the grange on public questions in which this body is concerned. Aside from that portion of the address dealing with the machinery of the organization we select for the benefit of our readers the following carefully considered topics of general public interest.

### A Complete Postal Express.

The Grange demand for Parcel Post Improvement will not be satisfied until we have established a postal express service reaching all rural districts as well as the cities, as full and complete as that now enjoyed by the cities by the double service of the limited Parcel Post and the private express companies. We have given our support to the administration in the improvements made, and have been satisfied with them because we have firmly believed they were steps in a well considered plan of developing a complete service in accordance with the farmers' desires. If this confidence is justified, the time has now arrived when we have the right to expect a further increase in the weight limit on the short hauls to 100 pounds, and on long hauls to fifty pounds. I do not think that making this test at this time can be considered unreasonably, for the Postmaster General and the Chairman of the Interstate Commerce Commission have officially testified that the weight limit ought to be at least 100 pounds and the general understanding has been that such an increase was contemplated as soon as the department had adjusted itself to handling the heavier weights. But since then powerful interests have organized to oppose the extension of the Parcel Post beyond the present limits. To get the merchants of the big cities to support this plan the express companies are to give them the service that is to be denied to the rural districts. In return, these merchants and the merchants' associations of the big cities, are to refuse any support for Parcel Post extension and bring all their influence to bear on the postal administration and Congress to prevent further extension of the Parcel Post. This movement has already resulted in two attempts at legislation by Congress, and I have myself heard it boasted that the department will not oppose the plans of such powerful combination. I sincerely hope that there is no justification for such claims, but it is significant, to say the least, that merchants' associations, on whose support we confidently counted, have ceased to cooperate, claiming that the Parcel Post work is completed, and are now supporting the non-extension policy.

The whole animus to this opposition is cold blooded indifference to the farmers' needs for an improved service and determination to ride roughshod over his rights. Will it prevail? Most assuredly it will unless the farmers themselves see to it that their interests are properly looked after. This we propose to do by reorganization of the Postal Express Federation and keeping Brother Hampton on the job at Washington until all danger is past and the ex-

tension work has gone so far that its completion is certain. The simple plan by which this is to be accomplished will be presented to you at the proper time and I bespeak for it the most careful consideration.

### Postal Savings Bank extension, and the People's Pension Fund.

The attitude of the present postal administration to broadening and improving the Postal Savings Banks service is most gratifying, especially in the enlargement of the amount that can be carried on individual deposit, and the disposition to aid the movement to carry into effect the Grange resolution for the loan of postal savings to farmers. Congress, also, in its Rural Credit legislation shows a desire to carry this purpose into effect. At the outset, however, we are confronted with the fact that the total savings banks deposits are too small to have any appreciable effect in supplying the farmers' loan needs. But there has lately been introduced into Congress by Senator Owen, of Oklahoma, in the Senate (S. 3554), and by Congressman Calder, of Brooklyn, N. Y., in the House, (H. R. 13,769) a bill—they are duplicates—"to authorize the acceptance and administration of savings by the postal savings bank service of the Postal Department for Crescent (Tontine) Life Annuities." It is proposed to establish under the full control of the Government, absolutely removed from all possibility of manipulation for private gains, a People's Pension Fund that will give to every one in return for small annual payments an income that will steadily grow larger as the years go by, and furnish an ample pension to enable old men and old women alike to live, independent and comfortable, to the end of their days. The public welfare importance of such a pension system cannot be overestimated and the postal savings deposits will then be ample to meet every loan need of the farmers. The tremendous importance of this matter has grown on me steadily since I first studied it, and I submit it to your consideration believing that we should direct our influence in securing the earliest possible action by Congress.

### Penny Letter Postage.

A campaign to secure a reduction of letter postage from two cents to one cent, is being conducted by an association spending \$50,000 a year, and appealing for support to increase the amount to \$500,000. This is certainly a joke on the wholesale and retail merchants supporting it, for the great beneficiaries would undoubtedly be the giant concerns which conduct their business wholly by correspondence, namely the mail order houses. Whatever the result, farmers are absolutely opposed to any reduction on the letter postage until the parcel post is fully established, for we do not propose helping to create a heavy deficit in the letter postage, which would be inevitable under penny letter postage, to block parcel post extension and other urgently needed improvements.

### Direct Trading Between Producers and Consumers.

The Parcel Post has made direct

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FOR MOTOR CARS

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High grade fruit trees, roses, shrubbery, etc.

Fine two-year-old rose bushes delivered anywhere, prepaid, at bargain prices. Write for list.

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| 10 in. long, 7 in. wide | \$10.00  |
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trading a practical possibility on a nation-wide scale. Both as your State Master and as President of the Conference of Progressive State Granges, I have gone into this matter quite thoroughly. We can reach the Eastern consumer by the combination of fast freight carload shipments and delivery to the city consumer by the low rate Parcel Post, and the Postal Express if perfected and transportation discriminations generally eliminated, the home market will develop rapidly. This matter will be submitted to you fully during the session and I therefore confine myself in this address to recommending it to you as one of the most important matters you will have to consider and urging you to give it special attention. We have to consider it in its national as well as its state aspect.

#### Education.

The foundation on which a noble and enduring educational system can be built is a thoroughly efficient common school system that will guarantee to every child an education which will fit it for the work it has to do. For the State to spend money on the higher education until that is amply provided for, is to rob the many for the benefit of the few. Not one out of twenty of our school children ever enter our colleges, and it costs our State about \$800.00 per annum for each student in our colleges. What right has the State to make such expenditures for the fortunate one who perhaps has parents amply able to meet the expense, before making adequate provision to improve the schools for the other nineteen who must be satisfied with what the common schools afford. We are not opposed to higher education, but patrons, we must see to it that it is not at the expense of our common schools. We must demand that they be first improved so as to provide education up to the 12th grade.

#### The Seven Sisters.

The legislative committee will deal with the State legislative work and I ask you to give the committee's report your most careful attention. Our present State legislative campaign, is practically summed up in our fight for the "Seven Sisters." These are so well known to you all, and I have given my views so freely in the press and on the platform, that it is not necessary for me to worry you with repetition here. The vital thing is that we must get the signatures to the petitions necessary to place them on the ballot next November.

Two sisters, Mrs. Selma Hanson, Master of South Fork Grange, and Mary E. Clark, Secretary of Halls Lake Grange, have returned the greatest per cent. of signers in their localities. Indications are that we shall have all the signers we need, but it will not do to let up or take any chances. It is important, also, to keep in mind that the best way to insure carrying these measures by a big majority at the general election is to put them on the ballot with a big surplus of signatures.

I have spoken elsewhere of the difficulties we have had to overcome in securing signatures to these petitions owing to the prohibitive restrictions in the law. These restrictions must be abolished, but many of our friends have overcome these handicaps by the constant sacrifice of their time and personal affairs and have

kept petitions circulating. Our co-workers of the State Federation of Labor and of the Farmers' Union are especially worthy of praise in this connection. This is true, also, of those political parties whose aid, both by moral support and work, has been so effective. I feel that we owe a word of praise particularly to the Hon. J. C. Lawrence for his faithful work for these measures. He opened headquarters in Spokane, made daily and hourly talk for them and secured many signatures, and others who went out as a result of his work secured many more. It is work of this kind, brothers and sisters, that makes the scheming of our enemies fruitless. My appeal to you is not to take any chances. We cannot afford to. The Fish interests and the fake promoters under the guise of the "Stop-Look-Listen League" are fighting the Fish bill and the Blue Sky bill bitterly, for they know when these measures are enacted their day of robbery is ended. Every one of the Seven Sisters hits some grafter or group of grafters or special privilege corporation, and all these are leagued together. Combined they are indeed powerful, and with unlimited funds, workers and ramifying influences, they will defeat us if defeat is possible. The only thing for us is for each and everyone to keep everlasting at it until the very last moment. We fight for the freedom of our great state and the liberty and prosperity of her people.

#### Agriculture.

The resources of our young state are unsurpassed by any State in this Union but we should be watchful lest with all this great wealth of soil and natural resources we, through careless methods of handling the soil like our fathers and brethren of the East shall rob our soil and in so doing rob our pockets at the same time.

God gave this State more in natural resources than that of any other State in the Union and it should be our bounden duty to see to it that these are not longer filched from the people but held as the heritage for generations yet unborn.

We have read much of the abandoned and worn out farms of the East. I want to warn you that what is true of their conditions will be written of ours, rich as we are in soil fertility, there is a bottom to all soil if farmed on the one-crop system. Much has been said of the "Book Farmer" but I want to say to you that he is making good. Hundreds of these so-called book farmers have taken hold of these abandoned and worn out farms of the East and have redeemed them and made them yield a profit on the labor investment. Modern methods and intelligent cooperation is your salvation and this calls for a close study both in adaption of crops and methods of cultivation. This brings home the question of diversification which means more live stock and the marketing of our crops in the concentrates and not in the bag or bale. The educational campaign of Prof. P. G. Holden in our State last year "Alfalfa on Every Farm," caused a real awakening, and the beneficial effects are already being felt, not only in Washington but throughout the entire Pacific Northwest.

Patrons, the hope of the farmer in Washington lies in two great and



**On Farms Where Efficiency Rules**  
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"The Roll of Honor"

A roofing of everlasting, pliable stone, made of pure Asbestos and Trinidad Lake Asphalt. A perfect protection for otherwise perishable buildings. Requires no paint or other protection. No maintenance cost. Keeps

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Proof against every weather condition. Easy to lay with J-M Cleats, which come with each roll. White and attractive — no cement-smearing, unsightly joints or laps.

J-M REGAL ROOFING was perfected to supply a demand for a rubber type, wool felt roofing, lower in price than J-M ASBESTOS, but containing the H. W. Johns-Manville Co.'s standard of quality and service. Also applied with J-M CLEATS. J-M ASBESTOS SHINGLES meet the demand for a decorative fire-proof residence roofing that never needs paint.

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West Chester, Pa. U.S.A.  
April 8, 1914

H. W. Johns-Manville Company,  
New York City, New York.

Gentlemen:  
We are using your Asbestos Roofing on our new dairy barn, having decided to adopt it because of the satisfaction it has given us on other buildings. Our barn and equipment are thoroughly modern in every way, and our dairy is run on a profit-producing basis, so that the feature of ultimate saving which can be made with your permanent roofing was an attractive one. It also gives an appearance of neatness, which is very valuable on a dairy farm like ours. We are glad to recommend it.

Yours very truly,  
THE SHARPLES SEPARATOR CO.

*R. Shaple*  
Vice-President.

712-M.O.

The Sharples Separator Co.  
Dairy Barn, West Chester, Pa.

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ORNAMENTALS  
SHRUBS

A Fine Stock of Apples, Pears, Peaches, Plums, Prunes, Apricots and Small Fruits.

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The Chas. H. Lilly Co. Seattle.

## Loganberry Plants

We have a full line of Loganberries, Mammoth Blackberries. Also other varieties of nursery stock and will be pleased to have you make your wants known to us. Would like to get someone to act as salesman for us. Write for particulars.

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## Pfau Pneumatic Water System

WATER DIRECT FROM THE WELL TO FAUCET: NO STALE, INSIPID OR STAGNANT WATER FROM FILTHY STORAGE TANKS

—MODERATE COST—  
LESS THAN 5¢ PER 1000 GALLONS TO OPERATE. DOES NOT GET OUT OF ORDER. GET FURTHER PARTICULARS FROM

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## WARNING

Homesteads in Western Canada  
160 Acres of Excellent Agricultural Land  
Free on Payment of \$10 Entrance Fee

The Canadian government has an authorized agent, Jas. N. Grieve, located cor. 1st and Post Sts., Spokane, Wash., for the purpose of giving information free regarding the districts in the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia, and localities where homesteads are to be had. There is no necessity to pay anything more than \$10 entrance fee when you appear at the land agency of the government in Western Canada to make entry.

Warning is hereby given that none other than Mr. Grieve or those authorized by him is permitted to grant certificates for reduced rates on the railways.

Information is absolutely free. Beware of those who ask money for this information.

W. D. SCOTT, Superintendent of Immigration  
For the Dominion of Canada Ottawa, Canada



vitaly important questions; Cooperation and Diversification. Cooperation with your brother farmer in an intelligent handling of the surplus products of the farm and diversity means live stock, and herein lies our hope and both are within our reach. I commend these suggestions to the careful consideration or the Committee on Agriculture and Cooperation.

#### WESTERN WASHINGTON FAIR.

For the next exhibition of the Western Washington Fair Association, the president, W. H. Paulhamus, and J. P. Nevens, secretary, Puyallup, are requesting special premium contributions to be made. The fair is an event requiring much attention and work on the part of public spirited citizens and is carried on for the purposes of education, standardization and for more united efforts on the part of producers to attain a high standard of production.

#### THE SILO AS AN ECONOMIZER OF SPACE

One ton of mixed hay occupies 40 cubic feet.

Eight tons of corn silage occupy 400 cubic feet.

One ton of mixed hay contains 1,742 pounds of dry matter.

Three tons of corn silage contains 4,224 pounds of dry matter.

One ton of mixed hay contains 960 pounds of digestible dry matter.

Eight tons of corn silage contains 2,560 pounds of digestible dry matter.

The silo not only furnishes economical storage but it enables the farmer to handle his crop cheaper than by any other method.

#### AGRICULTURAL IMPORTS AND EXPORTS.

According to the Department of Commerce our agricultural exports are decreasing while imports are increasing. Farmers will figure accordingly on prospective markets. Imports of foodstuffs in their natural condition, including food animals, increased from \$117,194,237 in the half year ended with March, 1913, to \$143,421,536 in a like period ended with March, 1914, and imports of foodstuffs partly or wholly prepared for use in the same period advanced from \$95,744,241 to \$100,967,378. Thus the increase in importations of all food products in the period named amounted to over \$30,000,000, or an average of \$5,000,000 per month.

On the export side the figures are even more striking. Of crude foodstuffs the sales to foreign countries fell off more than 50 per cent., while prepared foodstuffs also declined, though in smaller proportion. Experts of the first-named group fell from \$115,850,453 in the six months period of last year to \$55,483,787 in the half year which ended with March of the current year, and manufactured food products from \$180,007,422 to \$162,022,620.

The articles of food showing the largest increase in importations during the six months under review are fresh beef, cattle, corn, wheat, rice, macaroni, fruits, molasses, and edible oils. We imported during the six months which ended with March last 550,000 head of cattle, or more than double the number imported in the corresponding period a year earlier; 83½ million pounds of beef and veal, or over fifty times as much as a year ago; nearly 9 million bushels of

corn, or 30 times as much as in the corresponding six months of last year; 140 million pounds of rice and rice flour, or nearly 50 million pounds more than a year ago; and 66 million pounds of macaroni, vermicelli, and other similar preparations, as against 53 million pounds in the corresponding six months of the preceeding year. Sugar is a conspicuous exception to the rule of increasing imports of food products. Of cane sugar the imports in the six months ended with March amounted to 1,650 million pounds, compared with 1,809 million in the corresponding six months of 1912-13, while of beet sugar the imports fell to 1¼ million pounds, in comparison with 182 million pounds in the half period which ended with March, 1913.

#### SMITH LEVER LAW IN EFFECT.

The Secretary of Agriculture has written to the governors of all the States asking that they designate the college or colleges to which the funds provided by the Smith-Lever co-operative agricultural extension law are to go. This is the first step in putting into effect this act, approved by the President May 8, which provides for the granting of Federal funds to the State agricultural colleges to aid in diffusing among the people useful and practical information on subjects relating to agricultural and home economics and to encourage the application of the same.

The conditions of the act are that each State must duplicate the money above \$10,000 a year appropriated to it by the Federal Government. The money raised by the State may come from the State, county, college, local authority, or individual contributions from within the State, for the maintenance of cooperative agricultural extension work. The governor of each State in the interval until legislature meets, is called upon to designate the agricultural college or colleges to which the Federal funds are to be paid.

The act provides that each State in which an agricultural college is designated shall receive as a basic fund from the Federal Government \$10,000 annually without additional appropriation from the State. The act then makes provision for additional appropriations to be distributed in the proportion which the rural population of each State bears to the total rural population of all the States, as determined by the next preceding census. To share in these additional funds, however, the State, either through State, county, college, or local funds, or from individual contributions from within the State, must duplicate the additional amounts granted by the Federal Government for the maintenance of the cooperative agricultural extension work provided for in this act.

#### RURAL TRAINING.

Oak Harbor, Wash.

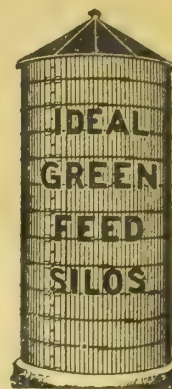
To accomplish as much as possible for the upbuilding and improvement of the community in which it is located has been the aim of the Oak Harbor high school. Much has been done during the school year which has just closed, to bring about hearty and mutually beneficial cooperation between the school and the people of the community.

The new school building was made

## "Uncle Sam" Buys

The U. S. Department of Agriculture has just ordered an Ideal Green Feed Silo to be shipped to Glenwood, Hawaii.

This Ideal Green Feed Silo was purchased after fully investigating the merits of all other silos, including home-made, re-sawed and cement silos.



On account of the superior work that the U. S. Department of Agriculture is doing, it is necessary that they be equipped with the best obtainable in order to secure the best results, and "Uncle Sam" is a good judge.

The fact that the U. S. Department of Agriculture have purchased an Ideal Green Feed Silo for their own use should be convincing evidence that it is the proper silo for you to buy. Write today for new descriptive folder B for full information.

#### ENSILAGE CUTTERS AND ALPHA GASOLINE ENGINES

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## Ground Phosphate Rock

### The Natural Plant Food and Permanent Soil Builder

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station, \$1.96½ gave \$22.11—over 1000%. At Ohio station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-phosphoric destructive acids, but so finely ground as to become available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah

Write for literature.

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## Bangholm Rutabaga, Bortfelder Turnips

Plant during June or July on any rich moist soil, and you have two of the best producing roots.

Price only 50 cents per pound postpaid. Ask for special prices for large quantities. We sell only direct to farmers.

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and Perfection Currant

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Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear. Correspondence solicited.

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PEAR TREES—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nellis, P. Barry.

APPLE TREES—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

A. HOLADAY SCAPPOOSE, OREGON



possible by the generous donation of a beautiful and spacious site of ten acres, given by one of Oak Harbor's public spirited citizens, Mr. William Izett. School has now been conducted two years in this building.

One of the cooperative undertakings of the present year was the improvement of the school grounds, at which pupils and people of the community united in conducting a "grading bee" for the school. A splendid beginning was made and this will be added to it is hoped, with each succeeding year.

It is the aim of the school to turn out pupils who shall be able to take their places in the community as leading citizens, who shall by precept and example be an inspiration and help to their neighbors. For that reason the training has been planned to follow practical lines. In promoting this object it was necessary to turn the attention of the pupils to industrial work as well as the regular text book work. For this reason manual training was decided upon although there were no funds to provide equipment, and no teacher to give instruction in that subject. The teacher was supplied by the school janitor who is an excellent mechanic and a man with much experience in handling men. Only less important was the question of tools. The pupils were called upon to loan all they could. The new instructor, Mr. A. A. Gray, furnished a set and various members of the community found they had a few tools to loan. Thus a start was made and later by means of an entertainment, funds were secured for the purchase of some of the most essential tools. One of the citizens, Mr. James Neil, also donated a number of tools so that the shop was well equipped before the year closed.

As much attention was devoted to the needs of the girls for the industrial training and a class in sewing was begun near the beginning of the year. Later a class in cooking was also started.

Use has also been made of a portion of the excellent school grounds, the second largest in the state, for gardening and agricultural purposes. As this is an agricultural community, this will probably be the most important department of the school activity in the future. It is hoped that the high school will send large numbers to the State College at Pullman to get more of industrial education.

This year the Oak Harbor high school graduated its first class. The class was composed of four boys and one girl, and every member will continue his education. The boys are all going to college or university, and the young lady will take up a teacher's course at one of the State Normal schools. This is the first class and they are setting a good example.

C. L. Hultgren,  
Superintendent.

## TIME TO BUILD SILOS.

By Geo. Severance, Agriculturist State College, Pullman, Wash.

The time of year is now approaching when those farmers interested in putting up silage must begin making arrangements for this work. The farmer who is fortunate enough to be provided with a good silo need

give this matter but little thought until his crop is ready for harvesting. Many farmers, however, realize the value of silage but defer making preparations for putting it up until it is too late each season to construct a silo. The Experiment Station wishes to urge upon the farmer to give the matter of silage use and silo construction serious attention.

Observations the country over reveal the fact that there is scarcely any system of farm feeding which will add to the profits of the farm like the use of silage. Especially is this true if dairying is carried on, even in a small way upon the farm. The advantage of succulent feed at all times of year is recognized by all who have had any experience in the use of silage. It also has the advantage of reducing the amount of concentrated food required by the stock. Another advantage that this has over other ordinary forage crops is that rain or bad weather need not interfere with the harvesting of the crop.

The question as to what type of silo to construct is a troublesome one to many. The answer to this depends largely upon local conditions and the ability of the farmer to immediately finance the undertaking. A cheap silo, that is, one costing a small amount of money is much better than none at all. However, a cheap silo, like a cheap coat, is usually the most expensive in the long run. A silo constructed of durable material which will last for years, of course, is the one to be preferred. The pit silo, while better than none, is the least to be preferred and can be regarded as only a temporary makeshift.

The cost of construction and size of silo needed is discussed in Popular Bulletin No. 46 of the Washington Experiment Station, which will be sent free upon application.

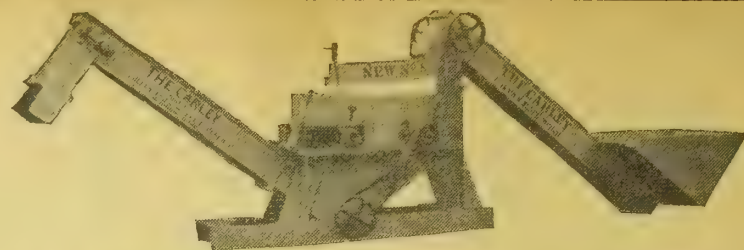
The variety of crops which may be used for silage is large—so large, in fact, that no farmer is without such a crop. Corn is the crop most commonly used. Peas and oats have been very popular; also vetch and oats; or, instead of oats, barley may be substituted with either of the above mentioned legumes. Clover and corn make a good combination, and some of the dairymen have recently found one of the best silage combinations is wheat and clover, claiming this to be superior to corn silage and having the advantage that much larger yields per acre can be produced.

## THE BANGHOLM TURNIP.

In the coast section are numerous localities where the ground is moist enough for germination of seed during the summer months.

Dairymen do not usually have too much feed and to many it might be advantageous to plant some seed of the Bangholm rutabaga or of the Bortfelder turnip. The Bangholm has purple top, short neck, no branches, yields well, is rich in dry matter and is easily grown.

The Bortfelder is long, large nutritious, easy to grow and harvest, also has good keeping quality. These root crops can be sown any time up to August and afford considerable feed during the late fall and winter months. The seed was introduced into this country from Denmark by the Aabling Ebright Seed Company, Seattle.



**The Carley Roller  
Feed Mill** In Seven  
SIZES  
THE LATEST AND BEST MILL ON  
THE MARKET TODAY

Send for Catalog  
Manufactured only by  
**Colfax Iron Works, Inc.**  
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Successors to CARLEY BROTHERS

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**Northwest Horticulturist**

Tacoma  
Washington

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A. MILLER & SONS, INC.—MILTON, OREGON

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You can buy cheaper trees for less money,  
but you can't buy better trees for more money.

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Prices on Request.

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We have facilities to handle quickly and advantageously  
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We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation  
923-5 Railroad Ave. CHAS. UHLEN SPOKANE, WASH.

## NURSERY CATALOG FREE

Full of helpful suggestions to make your place beautiful.--It's up-to-date, Instructive. Please mention this paper and write to,

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Portland, Ore.



# IRRIGATION

Adequate, available moisture  
at all seasons.

## BETTER FARMING.

### Better Business on the Farm.

By I. D. O'Donnell, Supervisor of Irrigation in Reclamation Record.

The advancement of the interests of the farmers in any country depends upon the adoption and the application of the principles of the formulae—Better Business, Better Farming and Better Living.

I put the formulae in the order of their ranking importance. We are investing millions of dollars in teaching the science of better farming; we are seeking the means of better living for the farmer, but, to realize the benefits of better farming and better living, we must be religious in our efforts to instill in the minds of the American farmers the necessity for and the means of acquiring and applying the principles of better business.

The science of better farming and the plans for better living will not avail unless the foundation—better business—is carefully ingrained in our scheme of agriculture.

Before the days of our excellent transportation facilities each farming community could control its markets and general business by the application of a very simple system—of exchange, sale and purchase. Since the advent of good transportation facilities no agricultural community in this country is independent of any other section of the country or of the world in general. Prices for our products are fixed by the prices available in the large business centers and our markets are open to invasion by farmers from other sections who can produce our products more cheaply and better in quality.

Better business on the farm reaches into every item of farm life. The layout of the farm with its buildings and fields should be planned as a manufacturing plant is planned—for efficiency. The rotation of crops to be followed should be planned with an eye to definite maximum results; the breeds of livestock to be handled should be chosen on the basis of potential profits; the community spirit, or the association with fellow farmers, should be fostered in a business-like manner because it is good business; communication with the general business world—or what is generally known as boosting—should be done aggressively by the farmers, for good boosting is good business.

In the beginning the farmer should realize there are certain farm products for which there is continuous demand in his section of the country and for which he can always receive fair prices. He should join with his neighbors and all should equip themselves to produce those products in quantity and of quality that will insure good returns.

Hundreds of farmers in every section of this country are to-day devoting their time and investments to the production of crops which, though they yield fairly well, do not bring the farmers profits. Farmers should know what crops pay and what crops do not pay. They should apply to their business of farming the methods that are used in successful manufacturing plants—they should keep books with every department of the farm work.

Ascertain what crops or produce pay best in your section and then boost those products and boost your section of the country as the best place on earth for those products. Do not be afraid to make a noise about your products if you have products of the right quality.

The science of successful manufacturing consists of taking raw materials and making them into finished products that are required and desired by the public. Every farm should be a manufacturing plant. Every farmer should market not his raw materials, but a finished product that the public wants. By so doing he will receive the reward for producing the raw materials and the reward for making them into the finished product. The farmer may produce these finished commodities by feeding his grain, forage or root crops to live stock. His manufacturing plant may consist of dairy stock, hogs, sheep, beef cattle or poultry. Or, he may associate with his neighbors and operate a canning factory, an evaporating plant or may organize a creamery and cheese making association.

The idea of making every farm a manufacturing plant is well covered by the maxim, "Raise all you feed and feed all you raise."

When the farmers of this country become better business men you will see them doing better farming and enjoying better living. The business man on the farm will adopt scientific farming methods for business reasons, and he will improve his social condition for business reasons. The most important thing farmers of to-day should strive for is better business on the farm.

## HOMES ON IRRIGATED LANDS.

A census of the farm units on the several irrigation projects of the Government was taken recently. It showed that very satisfactory progress is being made in securing settlers. Included in the 25 projects are approximately 26,000 occupied farms varying in size from 5 to 160 acres each, and 454 units of 40 to 80 acres each still open to entry.

These farms are located as follows:

Idaho, Minidoka project 58; Montana, Huntley project 42; Lower Yellowstone project 18, Sun River project 45; Nebraska, North Platte project 23; South Dakota, Belle Fourche project 65; Wyoming, Shoshone project 203.

These vacant farms offer attractive opportunities for settlers with some capital to establish homes. The land is surrounded by well tilled farms, the neighborhood is compact and school and social organization are first class. The pioneering stage on these projects is over and agriculture is on a sound and practical basis. On all of the projects the transportation facilities are good and the farms are all within reasonable distance of towns and shipping stations. The average man should have about \$2,500 in cash and equipment. While many settlers undoubtedly have started with less and are succeeding, experience has shown that success is much more easily attained by those who start with enough to

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—a product of selected grades of California crude oil, distilled and re-distilled, treated for the elimination of all foreign matter and by means of exhaustive laboratory tests, maintained at the most rigid standards of uniformity and high quality—in short, the best gasoline the Standard Oil Company can make.

Red Crown signs are furnished to all dealers handling Red Crown Gasoline. Watch for the Sign or ask our nearest agency about delivery in bulk.

**Standard Oil Company**  
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# SEEDS That Grow

CYPHER'S INCUBATORS

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## Vulcan Stumping Powder

The best powder for stump blasting purposes. Low freezing. Made on Puget Sound for more than six years and is giving excellent satisfaction to thousands of users. Plain directions with every case. If you can't get VULCAN STUMPING POWDER from your dealer write us. We also sell direct. Please mention this paper.

**Puget Sound and Alaska Powder Company**  
419 Commerce Bldg. EVERETT, WASH.

quickly prepare their lands for crops. To all inquiries addressed to the Statistician of the Reclamation Service at Washington, D. C., the advice is given not to attempt to subdue a desert farm without sufficient money to provide for the needs of a family for two

years and for the preparation of the land, erection of buildings and purchase of live stock. Spring crop reports on all these projects are extremely encouraging and indicate the best season since water was made available for the lands.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WATKINSON

### THE CHILDREN IN CLOUDLAND.

They say there's a country in one  
of the stars

Where the children all have their  
own way.

There's no one to tell them they  
"mustn't" or "must,"

So they do as they choose all day.

Rich plum cake and candy and all  
sorts of sweets

They may eat to their small heart's  
delight,

Can wear their best clothes every  
day in the week,

And sit up till all hours of the  
night.

They don't have to see that their  
faces are clean,

Or have snarls taken out of their  
hair,

For grown folks don't live in that  
far-away star,

So of course there is no one to  
care.

You'd think that those children of  
Cloudland would be

Just as happy as birds in the  
spring.

But, queer to relate, they are just  
the reverse,

And seem not to be pleased with  
a thing.

They get into trouble, as all children  
do,

Who have no one to tell them  
what's right,

And often, through having their very  
own way,

Find themselves in a terrible  
plight.

And somehow they've heard of the  
Earth boys and girls

Who have love and the tenderest  
care,

And so, they are crying because they  
don't have

Any fathers and mothers up there.  
—Mothers Magazine.

### THE SIMPLE LIFE.

Some of the Rewards That Come to  
Those Who Follow It.

I am bound to praise the simple life  
because I have lived it and found it  
good. \* \* \* I love a small house,  
plain clothes, simple living. Many  
persons know the luxury of a skin  
bath—a plunge in the pool or the  
wave, unhampered by clothing. That  
is the simple life—direct and im-  
mediate contact with things, life  
with the false wrappings torn away  
—the fine house, the fine equipage,  
the expensive habits all cut off.  
How free one feels, how good the  
elements taste, how close one gets  
to them, how they fit one's body and  
soul! To see the fire that warms  
you or, better yet, to cut the wood  
that feeds the fire that warms you;  
to see the spring where the water  
bubbles up that slakes your thirst  
and dip your pail into it; to see the  
beams that are the stay of your four  
walls and the timbers that uphold  
the roof that shelters you; to be in  
direct and personal contact with the  
sources of your material life; to

want no extras, no shields; to find  
the air and the water exhilarating;  
to be refreshed by a morning walk  
or an evening saunter; to find a  
quest of wild berries more satisfy-  
ing than a gift of tropic fruit; to be  
thrilled by the stars at night; to be  
elated over a bird's nest—these are  
some rewards of the simple life.—  
John Burroughs, Quoted in "Our John  
Burroughs". by Clara Barrus.

### WHY ARE WE AFRAID?

Why are we afraid? What are we  
afraid of? We all have something  
we are afraid of. What it is depends  
on the individual. Some people are  
afraid of the dark; others are not.  
Women are afraid of mice; men are  
not. Some children are afraid of  
dogs; others are not. Some babies  
are afraid of strangers; others are  
not. Some people are afraid of bur-  
glars, others are not. Some are  
afraid to stay alone in a house. Since  
some people fear things that others  
do not, we may safely conclude that  
the cause of the fear is not in the  
thing, but in the person. If the fear  
arose out of the object then all peo-  
ple would be afraid of it.

What we are afraid of depends on  
us. We can make ourselves afraid  
of anything we want to, be it the fear  
of being poisoned or of being laughed  
at. And since we can make ourselves  
afraid of anything we can cure our-  
selves of any of our fear—our fear  
of the dark, our fear of staying alone  
or any of the others.

Our fears generally start from  
some past experience, to ourselves  
or to our friends. A friend may have  
been killed on a railroad train, and  
the knowledge of that accident may  
always make us uncomfortable when  
we travel. A relative may have been  
poisoned, and we can think about it  
until we are afraid of being poisoned.  
Alone, late at night we read of a  
murder in the paper, and instantly  
we begin to interpret every little  
sound as the stealthy approach of an  
assassin. Stories of goblins told to  
children to keep them quiet may fill  
them with a dread of the dark that  
will persist after they have become  
men. And yet, if we stop to con-  
sider it, we will find most of our  
fears are groundless. We can cure  
ourselves of them by banishing all  
thoughts of them from our minds and  
thinking of something else.

The fact remains, we are afraid  
of what we allow ourselves to be  
afraid of.—Alfred Westfall, Color-  
ado Agricultural College.

### WORRY KILLS.

"The most terrible tyranny is the  
tyranny of an idea," says Hearst's  
Boston American, in an interesting  
explanation of how science proves  
that worry kills you. "Worry, medi-  
cal science now defines as the domi-  
nance of one idea; the idea crowds  
other ideas from the mind. This one  
idea pounds, hammer-like, upon one  
set of brain cells. It over-stimulates  
them, causing an unusual flow of  
blood to those portions, and a dearth  
of it to other parts of the brain. A  
constant overfeeding of these cells



## Keep It on the Table

A tasty addition to every meal; handy and healthy for the children's lunches;  
an economy food.

### ROGERS' NUT BUTTER

If your grocer hasn't it, write us, giving his name and full address, and receive  
FREE a SAMPLE JAR with BOOK OF RECIPES for dishes made with  
Nut Butter. Mention this paper. The ROGERS CO., Tacoma, Wash.



## Olympic WHEAT HEARTS

The little hearts of Wheat. A tempting breakfast  
dish, easily cooked. 4 pound cartons.  
Sold by all Grocers.

The Puget Sound Flouring Mills Co. Tacoma, Wash.



## Meals on Time

A good oil stove gives full heat just  
as soon as it's lighted. There's no waiting  
for the fire to catch up or the oven to heat.  
Meals can be started later and still be served right  
on time. That means less work and less time in  
the kitchen.

## New Perfection OIL COOK STOVE

burns kerosene, the clean, cheap fuel and gives an in-  
tense heat that can be regulated just as you want it. It  
does all sorts of cooking and baking just as well as a  
wood or coal stove—and without tainting the food.

Don't cook in a hot kitchen this summer. Don't lug  
coal and wood and ashes. Get a New Perfection.

It saves all this trouble and it's economical, too.  
Ask your dealer for the New Perfection.

Standard Oil Company  
(California)

FOR  
BEST RESULTS  
USE PEARL OIL

## A. S. Johnson & Co.



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Better  
Baking  
With  
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A Better  
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## NORTHWEST GROCERY CO.

TACOMA, WASH.

Conditions seem to indicate  
that everyone wishes to econo-  
mize and everybody should have  
our catalogue whether they buy  
from us or not. A postal with  
your name and address will  
bring it.

### Northwest Grocery Co.

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Tacoma, Wash.

Oldest and Largest Mail Or-  
der House in the State.

### 10c brings you "Gleanings in Bee Culture" for 3 months

Bees make orchards pay better. We make this Special  
Trial subscription offer just to acquaint you with the  
standard bee journal. Full of hints on the healthful  
and profitable pursuit of bee keeping. Book on "Bee  
Supplies" sent free with it. Send stamps or silver in  
envelope at our risk.

The A. I. Root Co., Box 58 Sutter St., San Francisco, Cal.

Please mention this paper



causes congestion there. The worry grows more acute, the pounding of the blood against the sides of the cells acquires a hammer-like violence. The sides of the cells wear thin. A cell bursts. There is a so-called clot on the brain. Death follows. Refuse to worry. Do your best, and, having done this, decline as positively to fret about the results as you would decline to drink a draught of poison. Worry is a habit, and a habit that destroys."

#### GOOD ADVICE TO HUSBANDS.

When your wife is becomingly gowned tell her so.

When she waits dinner until late for you, act pleased.

Call her the "dear" once in awhile that you worked overtime before she took your name.

Don't demonstrate your affection as if from force of habit. Some men kiss their wives in the same manner that they glance at the clock before leaving for work.

Don't read the newspaper at the breakfast table.

Go into your own kitchen once in awhile. Wash and wipe the dishes or scour the frying pan. Laugh while you are doing it.

Develope a sense of humor.

Don't complain about your wife's cooking, for when a man marries a woman he does not always marry a

cook. — Dr. Sarah N. Merrick, in Leslie's.

#### WHITE BREAD OR BROWN?

New York Commercial: White bread was said by those who claim to be experts to be much superior to brown bread and we were told that the idea of eating graham bread or any bread containing part or all of the bran of wheat or other portions of the grain which are taken out in the bolting process was old fashioned and might lead to injury. Now come the medical inspectors of the French army, a group of very distinguished physicians and scientists, who say that bolting pushed beyond a certain limit eliminates the useful element of flour in more than one respect and does nothing but improve the color of the bread. When white bread is used exclusively they have found that the men eat and need more meat, but when the flour is only partially bolted and only the coarser particles of the bran are removed the soldiers are in better health and they eat less meat, which results in superior economy and efficiency at the same time. The method of bolting flour was invented some centuries ago and it seems about time that the relative values of the white and unbolted flour were settled, but the doctors can no more agree about it than they can about the therapeutic value of alcohol.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### WORLD'S RECORD GUERNSEY COW.

"May Rilma" Produced 1073 Pounds  
Butter-fat in a Year.

The Guernsey cow "May Rilma 227-61," owned and bred by Capt. E. B. Cassatt, at his famous Chesterbrook Farm, Berwyn, Pa., has just completed her official year's work.

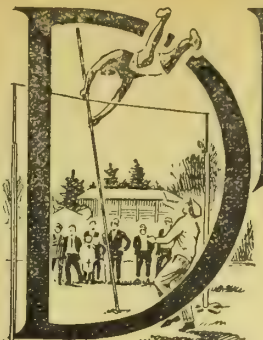
The making of large records and the possibilities of the dairy cow, to yield maximum results at the pail is a matter of more than passing interest to her owners. The producer wishes to know the cost of production and if his margin of profit is being increased under better methods. The

consumer also, regardless of all breed questions, hopes it may mean to him better and cheaper milk, for he it is who in the end pays the bill. Whether it is a Guernsey, Holstein or a Jersey that holds the pennant for production simply shows which breed is making the most progress along scientific lines and showing results. That the Guernsey leads in the economical production of the highest grade milk is very generally accepted. The name of the cow, the breed she represents and her wonderful record, should be known by all as a matter of dairy history.

May Rilma produced in 365 days from May 1, 1913, to May 1, 1914, 19673 lbs. milk and 1073.41 lbs. butter-



Guernsey Cow May Rilma, 1260 lbs. Butter in One Year.



## DE KOVEN

### A SCHOOL FOR BOYS

Ideally located on picturesque Steilacoom lake. A homelike and healthful school.

**TRAINS FOR LEADERSHIP**

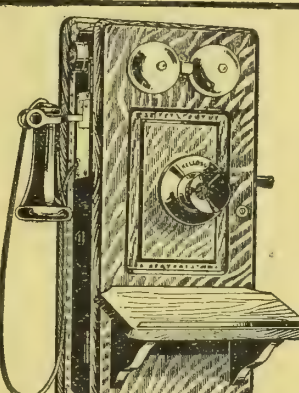
To give each boy individual attention, only a limited number admitted. Upper school prepares for Colleges and Technical Schools. Lower school for younger boys. Our 23rd school year opens Sept. 17. Write now for our illustrated catalog.

**D. S. PULFORD, A. M., J. R. EDEN, A. B., Principals**  
P. O. Address: South Tacoma, Wash.



## SODA CRACKERS

Packed in tins will  
keep crisp—  
**TRY THEM**

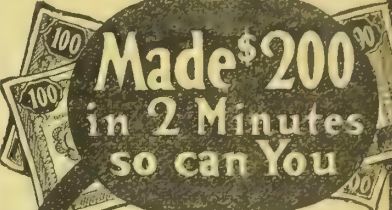


### The rural telephone

Upon its worth in the farmer's  
home vast fortunes depend

The most important of all the steps, in the furnishing of telephone communication in a rural community, is the selection of the type of telephone to be used. Kellogg telephones for this work are built for reliable service, clear talking and ringing over the longest, heavily loaded lines. Kellogg telephones are thoroughly constructed of few parts of the best quality material. They may not be the lowest in first cost but they are the most economical. This statement being proved in thousands of installations throughout the country. Kellogg telephones are built complete in our own factory—the largest independent telephone plant. Our special rural line telephone engineers are practical telephone men of long experience in this work. They can help you in planning your line, tell you how to avoid mistakes, help you save money. This service is a special feature of our farm line telephone and switchboard department. Write our nearest house if you want information or special assistance in the building of your line. Our bulletins on construction and telephone operation are practical, well illustrated and of value to every telephone man. Sent prepaid on request.

**Kellogg Switchboard & Supply Co.**  
86 THIRD STREET SAN FRANCISCO, CAL.  
Manufacturers of Standard Telephone Equipment. "Use is the Test."



Henry Reincke of Lake City, Minn. spent two minutes writing out a little letter and sending us his carpenter's bill to figure. He saved \$225 and got better lumber, so that his time was worth \$112.50 a minute. You can do as well as Mr. Reincke.

### Send carpenter's list now for quick prices

Our estimating department will send you quotation, freight charges included, the same day we get your bill. We'll work overtime or all night, to make good on our word.

**Buy direct from the mill —  
save the middlemen's profit**

Deal direct with the lumber producers. Through our officers, we control forests of old growth Douglas fir, logging railroads, saw-mills and millwork factories. We sell by mail only, pay no commissions — sell you at the whole-sale mill price, lumber that's clean, fresh and guaranteed true to grade.

**Quick delivery —  
satisfaction guaranteed**

We have on hand a big supply of lumber and millwork. We will ship your order within 48 hours. Delivery usually made within two weeks. We guarantee satisfaction or money refunded. Allow inspection of lumber before acceptance. Send that lumber list and do it now.

**Here's a letter  
from Mr. Reincke**  
Hewitt-Lea-Funk Co.  
Gentlemen:  
The lumber arrived in good condition. You have saved me about \$225.00 and the lumber is better than I could buy here from our local dealers. I am very thankful to the company and will help you get some more customers out of my neighborhood.

Henry Reincke,  
Lake City, Minn.  
March 31, 1914.

**Plan Book 10c — Catalog FREE**

A better book than sells usually for 50c to \$2.00. 100 homes pictured, with floor plans and cost. Our millwork catalog and lumber price list is free. Write for it.

**Seattle Silo direct to you  
at big saving**

One-piece, Douglas Fir Staves. Quick detachable door bars and hoop bars form strong ladder. Long tongues, extra deep grooves. Guaranteed not to blow down. Sold ready to erect. No extras. Lasts for years. Write for folder and freight paid price, mentioning height and diameter of silo desired.

**Hewitt-Lea-Funk Co.**  
493 Crary Bldg., Seattle, Wash.

### YOU CAN EARN \$50.00 PER DAY

with the  
Gearless Improved Standard  
Well Drilling Machine.

Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10

**REIERSON MACHINERY CO., Manfrs., Portland, Ore.**

## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

**ACME REALTY COMPANY**  
401 Equitable Bldg., Tacoma, Wn.

Chesterbrook Farm milk retails for twelve cents per quart, and this cow shows a gross earning capacity of nearly \$1200 for one year, an income equal to that of many men.  
—American Guernsey Cattle Club, Peterborough, N. H.

fat; nearly ten tons of milk and the equivalent of 1260 lbs. of butter.

Her work has been carefully supervised under the Advanced Register regulations of The American Guernsey Cattle Club, whose headquarters are at Peterborough, N. H. Pennsylvania Experiment Stations officials have conducted the regular tests throughout the year; seven outside Institutions from as many noted Dairy States, and a member of the Dairy Division of the U. S. Dept. of Agriculture, have sent representatives to conduct tests for the Club and study the work of this wonderful cow. No record has been more carefully watched.

Albert Van Tuinen, who as dairyman, has had immediate care of May Rilma, has shown great skill in handling and feeding to obtain results.



## BOVINE TUBERCULOSIS.

## Farmer's Concerned in Control.

In a discussion of the control of Bovine Tuberculosis, by W. J. Langdon, of Sumner, before the Convention of Northwest Milk Inspectors, at Seattle, he stated that E. G. Hastings, of the Wisconsin Agricultural College, is authority for the statement that it is believed 25% of tuberculosis in children under 5 years of age is due to infection from bovine sources and that the danger is confined practically to children. Numerous other authorities were quoted to show the danger of infection through milk from the cow to the youth.

Investigation indicates that about 14% of the cows in Washington are reactors and it would require at least \$1,500,000 to replace them. The farmers cannot shoulder this burden alone, neither the cost of testing. Where that has been tried dairying is a decreasing industry. The control of this disease only can be done gradually, both education, an even distribution of the load and considerable time being necessary. But it is doubtful if it can be entirely eradicated. Some of the suggestions are, tests to be done by the state, which also should share half the loss; stop the transfer of diseased cattle and pasturize the skim milk. Consumers should be educated to pay the increased cost of about 2 cents per quart for the clean milk from healthy cows.

## SURE CURE FOR MILK FEVER.

Mr. D. McInnes, ex-president of the Washington State Dairymen's Association, gives Fruit and Farm particulars of a remedy for milk fever that he has tried effectively and never had failed him. Soak as many grain sacks as necessary or convenient in boiling water—using the hog boiler or any other vessel of sufficient capacity—and lay the steaming sacks over the loins of the cow. Have the sacks as hot as the cow can bear, but not hot enough to scald, or take the hair off. Put dry sack on top in order to keep the heat in as long as possible, and change sacks continually until the fever abates. Mr. McInnes states he has found this treatment to succeed when the air treatment has failed.

As a preventative of milk fever, Mr. McInnes recommends giving the cow three or four cupfuls of epsom salts, dissolved in water about 48 hours prior to calving. By thus cleaning out the bowels the chances of milk fever are reduced to a minimum.

## QUALITY COWS PAY WELL.

Some twelve years ago Mr. H. W. A. Tramm, of Adna, Wash., was induced to take some Holstein cows at \$50 a head—a long price at that time—but assuming the correct way was to buy a purebred sire with good record and breed up that plan was adopted. Some good milk and butter records was the result in a few years, and now to get a good pick from his herd of cows will require \$350 a head, for they are making good in actual production on that principal sum. He is milking at present 28 cows, says the Bee-Nugget, and selling 1,000 pounds milk a day. He recently paid \$500 for a 2-year old Holstein bull out of high record dam and grand dam, in his opinion, and no doubt correct, a good investment. Here is another practical de-

monstration that it pays to breed up. He planted cabbage last fall and sold this spring at the rate of \$50 per ton, only one of the examples of good farming operations.

## CHICONA FARM GUERNSEYS.

Some of the pure bred cows on Chicona Farm, A. L. Gile, Mgr. Chinook, Wash., are under test and show and good work. Margaret of Chicona has produced 168 pounds of butter in eighty-one days, a little over two pounds per day. Hazel's Girl of Chicona, on test eighty-nine days, has 171 pounds of butter to her credit. Needius of Chicona, 142 days on test has produced 227 pound of butter. (La Verne of Chicona in thirty-nine days has sixty-seven pounds of butter. The above are all mature cows. The following are each two years old, as reported in "Rural Spirit":

Algoma of Holden has 255 pounds of butter in 188 days; Lucilla of Chicona, 100 pounds in eight-four days; Butter Queen of Willowbrook, fifty pounds in forty days and Billy's France Lucy of Friebaton, thirty-two pounds in twenty-five days.

These cows run on the same pasture and receive the same treatment as the balance of the dairy herd.

One of the Sire's dams has a remarkable record of 16,099.7 pounds milk and 781.51 pounds fat, or 938.3 pounds of butter as a three-year-old.

Mr. Gile has rich soil producing 150 bushels oats per acre and a profuse clover crop for pasture.

## GUERNSEYS ARE WANTED.

It is difficult to keep any young stock on hand so great is the demand for purebred Guernseys is the report of Mr. S. M. Shipley, Seattle, one of our advertisers. One of the buyers this spring was J. B. Farrell who took over the young sire, Mythop's Sequel. The Farrell herd is kept purely for milk producing purposes, winning the high scoring marks of certified milk. Mr. Shipley recently bought from the Chestnut Hill Farm, Ohio, the young sire, Gulnor's Billey Sequel, whose sire is Galaxy Sequel, being in line with his own established herd. Galaxy Sequel has 30 A. R. O. daughters and Mashers Sequel, his sire has 50 A. R. O. daughters. The dam of the young sire bought by Mr. Shipley is Imp Gulnor 20th, which produced 7800 pounds milk and 405 pounds butter in her two-year-old form. Her sire is Fleur de Lys, backed by noted records.

Mr. Shipley is figuring on bringing out other purebred Guernseys but whether or not they will be brought to Vashon Island where his present herd is kept, depends somewhat on the prospective interest the people there are preparing to show in this rich butter producing dairy breed of cattle.

## BREEDING UP PAYS WELL.

My butter is up to a high standard quality and I get from 30 to 45 cents per pound in the home market, keeping the skim milk for feeding the pigs says Mr. E. L. Lloyd, Monroe, Wash. proprietor of the Rocky Run Jersey Herd. There are 17 registered Jerseys and 6 good grades in my herd. For some years of careful work in breeding up with registered sires of satisfactory records has been the practice with results showing that it pays well to adhere to that system. On this farm, Oats, hay, kale and



# DE LAVAL

as superior to other separators as other separators are to gravity creaming

## WHY STOP HALF WAY IN BUYING A CREAM SEPARATOR?

THE ABOVE HEADING SUMS UP the cream separator case, as it concerns every prospective buyer of a separator and every user of an inferior separator, in as few words as it could well be put.

OTHER SEPARATORS SKIM cleaner than is possible on the average with gravity creaming, and De Laval Separators skim as much closer still than other separators, particularly under the harder conditions of cool milk, running heavy cream or separating the milk of stripper cows.

OTHER SEPARATORS PRODUCE a cream superior to gravity creaming, and De Laval cream is smoother, less frothy and so much better than the cream of other separators that De Laval made butter always scores highest in every important contest.

OTHER SEPARATORS SAVE time and labor over gravity setting or creaming of milk, and De Laval Separators by reason of their easier turning, greater capacity, easier cleaning and easier handling save a great deal of time and labor over other separators.

OTHER SEPARATORS SAVE their cost every year, as a rule, over gravity creaming, and De Laval Separators save their cost every year over other separators and last from ten to twenty years, or on an

average five times as long as other separators.

DE LAVAL SEPARATORS cost a little more than other separators, but very little, and they soon save that small difference and go on saving it every few months, as other separators would go on wasting it, for all the years they last.

WHY THEN BUT HALF SOLVE the problem of best results and greatest economy in dairying by the purchase of an inferior separator or go on dairying with this important problem but half solved if you are already using an inferior separator that you might so easily replace with a De Laval?

THE SEASON OF GREATEST production is now at hand when all these differences count for most with every user who should have a separator and is trying to get along without one. No other dairy question is of anywhere near as great dollars-and-cents importance.

WHY NOT SOLVE IT NOW in the only sure and safe way possible? If you haven't a separator buy a De Laval. If you have a poor separator, a De Laval. If it is not convenient to pay cash you may buy a De Laval on such liberal terms that it will actually save and pay for itself.

Every De Laval local agent is glad of the opportunity to prove every claim here made. It will cost you nothing and may save you much to give him the opportunity. If you don't know the nearest De Laval agent simply address the nearest main office, as below.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY NEW YORK 101 DRUMM STREET SAN FRANCISCO 1016 WESTERN AVENUE SEATTLE  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## A. J. C. C. JERSEYS

## Big Producers

For Sale—A fine bull calf, sired by Gertie's Stoke Pogis 33rd, out of Dixie Bertha, a sister of Morrow's Select, which made 826 pounds butter in one year. A bargain at my price, considering quality. Have both Island and American bred. Ancestral records of the very best. Particulars on application.

J. B. EARLY

Grandview, Wash. (Yakima County)

## BULLS FOR SALE from A. R. O. COWS

Home of K. P. Sanesta Topsy, only daughter of King of Pontiacs on the Pacific Coast, Ophelia Sanesta Pauline official record of 29. 46 lbs. butter 7 days and 20 others.

WRITE FOR PRICE AND PARTICULARS

CALVIN PHILIPS, Pres. GUY M. RICHARDS, Gen. Mgr.  
Greenbank Farm, Greenbank, Island County, Wash.

## HOLSTEIN HOME

Home of Maldeta Canary Mercedes, grand champion at Washington State Fair 1913, and the record price cow (\$1800) west of the Rockies. If you want a bull of the producing and show kind to head your herd let me tell you about some of my young ones.

E. B. MARKS, Proprietor

North Yakima, Washington



roots are the crops raised and the concentrates are purchased. To determine the value of each cow, the milk is weighed and samples taken at intervals, for testing. This serves to give the approximate worth but not so close an estimate as would be obtained by community testing.

Mr. Lloyd states he cannot afford to make complete tests alone and would willingly become a member of the necessary number to form a cow testing association for he realizes the value of keeping only the profitable cows both for himself and for others of his community.

Among his registered cows, 2 are in the Register of Merit. One heifer, first calf, gives 36 pounds milk a day with 4.4 percent fat. This is one of the dairy farms which has the correct foundation as to system, plans and equipment demonstrating that it pays to breed up.

#### ANNUAL MEETING OF AMERICAN GUERNSEY CATTLE CLUB.

The recent annual meeting of the American Guernsey Cattle Club was held in New York City and showed a remarkable growth in the Guernsey interests.

The advance of the Guernsey in public favor has been noted many times during recent years, but the report of the work of the Herd Register for the year ending April 30th, showed a remarkable gain for this year. During the last 20 years the number of Guernsey registrations and transfers has increased ten-fold and no small percentage of this is due to this last year.

The membership in the Cattle Club has increased from 131 to 591.

The American Guernsey Cattle Club is now in a very prosperous condition. This last year's business showed an income of \$76,448.83 with a balance on hand of \$4,056.03. This, together with the invested funds, office building and invoice of fixtures and Herd Books on hand, makes a present worth of \$41,419.56.

During the year there were imported 1150 head of Guernseys. Two bulls and 120 cows of these came from Alderney; 41 bulls, 881 cows from Guernsey; 6 bulls, 100 cows from England.

The work of The Advanced Register showed 1100 cows, owned by 193 breeders and representing 27 states, were on test.

#### Officers for 1914.

The following officers were elected:—Pres. Emeritus, James M. Codman, Brookline, Mass.; President, James Logan Fisher, Philadelphia, Pa.; Vice-Presidents, Ex-Gov. W. D. Hoard, Fort Atkinson, Wis., and Ezra Michener, Lumberville, Pa.; Sec. and Treas., Wm. H. Caldwell, Peterbore, N. H.; Executive Committee, F. Lothrop Ames, North Easton, Mass., F. G. Benham, Canadiagua, N. Y., Wm. H. Caldwell, Peterbore, N. H., James Logan Fisher, Philadelphia, Pa., E. T. Gill, Haddonfield, N. J., Charles L. Hill, Rosendale, Wis., W. W. Marsh, Waterloo, Iowa, M. T. Phillips, Pomeroy, Pa., Robert Scoville, Chapinville, Conn., S. M. Shoemaker, Eccleston, Md., Howard B. Tuttle, Naugatuck, Conn.

The evening previous to the annual meeting, a Guernsey Breeders' Conference was held at which time Prof. T. L. Haecker, of Minnesota, gave an excellent address on "The Relation of Food Product to Milk

Production," and Capt. Cassatt told of the wonderful work of May Rilma. This proved very pleasant and interesting occasion to the many breeders who were present.

Peterbore, N. H., May 29, 1914.

Wm. H. Caldwell, Sec'y.

#### GUERNSEY SIRE MELBA'S PRINCE.

The Guernsey Sire Melba's May Prince in the Registered Guernsey herd of Augustine and Kyer, Seattle, and advertised in this paper was taken over recently by Elmer Lenfest, President of the Snohomish Land Co., at Snohomish. Mr. Linfest is developing a fine pure bred herd and was particular in his choice of sires.

Quite a number of our readers are figuring on the problem of increasing the production of butter, aiming also for a higher quality of product, and are endeavoring to obtain Guernsey sires for use in their herds of common grade cows.

#### PUGET SOUND HERD SALES.

Wm. Rudolf, of Yamhill, Ore., purchased a yearling bull "Sir Inyo Johanna." His sire is a full brother to the world's record milk cow "Margie Newman." His dam is a 13.3-lb. daughter of the great imported bull Karel Bos, whose dam and granddam hold the two largest records made in Holland.

O. E. Lewis, of Seattle, Wash., purchased a bull one year old which is sired by Quirinus Cornucopia, whose dam has a record of 30.7 lbs. butter in seven days, and his highest official tested sisters have records of over 30 lbs. butter in seven days. The dam of this young bull is a heifer with a record made at the age of two years of 15.7 lbs. butter in 7 days; she is also a sister to Hazelwood Aaggia De Kol, who has a record of over 34 lbs. butter in seven days.

Hugh Nisbit, of Chimacum, Wash., purchased the fine young cow Cascade Violet Cornucopia 2d. She is soon due to freshen and has every indication of making a good record.

J. D. Gay, of Port Townsend, Wash., bought the young bull calf from a good producing daughter of Karel Bos, and it is sired by Violet Blossom Sir Fayne, whose 15 nearest dams have records averaging over 25 lbs. butter in seven days.

John C. Burnam, of Snohomish, Wash., got the large well built young cow "Aaggie Cornucopia Marie De Kol." She has an official record made at 3 years of age of over 18 lbs. butter in seven days. She is a granddaughter of Aaggie Cornucopia Johanna Lad who has almost 100 A. R. O. daughters.

George Ford, of Elma, Wash., got a young bull 10 months old. This calf is an extra fine individual, and his breeding is hard to beat, as his descendants on both sides of his family are closely related to the heaviest producers of the breed.

Herman H. Kuenzi, of Silverton, Ore., has made two different purchases during the last five years, returned again and selected three young heifers to add to his already fine herd of Holsteins.

H. L. Hansen, of Port Townsend, Wash., who has a small herd of Holsteins, purchased the fine young cow "Ononis Lady May." She has a good A. R. O. record and is well bred also.

Wm. Cook, of Ludlow, Wash., purchased a fine well-bred bull "Sir Inyo Korndyke." He is sired by a full brother of the world's record milk

## THE WORLD'S RECORD DAIRY COW THE GUERNSEY COW MAY RILMA

Gives . . . 19673 lbs. milk

Containing 1073.41 lbs. butter fat

IN 365 DAYS

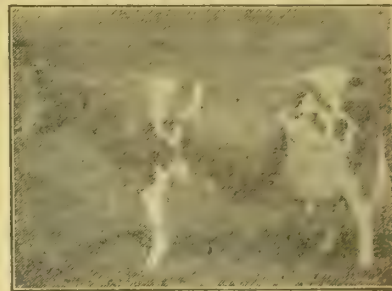
MAKING HER THE CHAMPION DAIRY COW OF ALL BREEDS

Write for the story of this cow's work and receive with it general literature about the breed

AMERICAN GUERNSEY CATTLE CLUB

Box N. W.

Peterboro, N. H.



MAY RILMA 22761; A. R. 1726

## Registered Guernseys and Registered Holsteins



Our registered Guernseys are being selected by leading dairymen, but there remains some good grades of this breed for selection at this time, and we are in position to take orders for very choice Guernseys, both grades and pure breds.

Write your wants for this breed.

In Holsteins we have heifers and some cows 2 to 4 years old, nearly all fresh cows of excellent dairy type and good yielders. Our young calves are attracting much attention, and most of them can hardly fail to make noted records, for they have high record breeding and correct form.

We can supply both Registered Holstein service bulls and bull calves and fresh cows for immediate orders, but would advise early application for those requiring them now or in the near future.

Please write specifying wants or make appointment to call.

## FRYAR & COMPANY

Please Mention  
This Paper.

SUMNER, WASH.

## Registered HOLSTEIN CATTLE

Our next shipment of registered Holsteins and two carloads of very choice young grade cows will arrive about the last of June. We have 100 yearling heifers and bulls on hand, but they are very choice and will make excellent foundation herds, to be delivered in early fall. The kind of stock we sell is such as will produce about three times as much profit as ordinary cows. In proportion to the actual net income they cost dairymen less money and less labor than ordinary stock.

Write me for particulars as to pedigree and prices at once.

Please mention this paper.

## H. S. ROYCE

Savage-Scotfield Bldg., A St.  
TACOMA, WASH.

Please mention this paper

## Meadow Brook Farm

Breeders of  
**Pure Bred  
Ayrshire  
Cattle**

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

**A. P. Stockwell, Aberdeen, Wash.**



cow "Margia Newman." His dam is a prize winning young cow that has a 2-year-old record of 19.04 lbs. butter in seven days. She is also a granddaughter of the old noted foundation cow "Bell Korndyke."

WM. BISHOP.

Chimacum, Wash.

GOOD BUTER SCORES.

The butter-makers of Washington are trying very hard to make a high standard quality of butter, and it behooves each dairyman to render every aid possible by conforming to correct sanitary methods in the handling of milk and cream. If the entire output of butter scored near the 95% mark it would mean larger profits for each dairy farmer.

The butter scoring contest held at Seattle recently under the direction of the Washington Creamery Operators and Buttermakers' Association, was declared a decided success, especially from the standpoint of the quality of the samples of butter entered in the contest. As a whole the score was very good, the fourteen samples tested averaging 94%, or 94 out of a possible 100 points. The Winlock Co-operative Creamery Co. obtained the highest award by a score of 96. The lowest score was 92.

The fourteen creameries contributing samples are to be highly commended both upon the quality of their product and upon their spirit of progress which prompted them to make their entries of samples, thus making the contest possible. It is hoped that by the time of the next scoring contest, which will be held at the time of the State Fair, many more creameries will avail themselves of the opportunity of placing their butter in scoring competition with that of other creameries, thus finding out any defects which their product might have, knowing which it

will be possible for them to do their part in raising the standard of quality of one of the greatest products of the State.

The scoring was done in a very efficient manner by Prof. A. B. Nyström, who is head of the dairy department of the Washington State College at Pullman, Wash.

Following is the complete list of entries with the scores, as given in Daily Produce Reporter:

Winlock Co-operative Creamery. 96.  
J. Benedickson, Spanaway ..... 95.75  
Tenino Creamery ..... 95.5  
Washington Harbor Creamery.. 95.0  
Spring Creek Co-op. Creamery. 94.75  
Arlington Co-op. Creamery Co... 94.25  
Stanwood Co-op. Creamery Co.. 94.  
Montesano Creamery Co. .... 93.5  
G. A. Hall, Chehalis ..... 93.5  
Anacortes Creamery & Prod. Co 93.5  
Laurel Co-op. Creamery Co. ... 93.25  
Capital City Creamery, Olympia 92.75  
Lynden Creamery Co. .... 92.75  
Swift & Co., Seattle ..... 92.

GUERNSEY SALES.

Augustine & Kyer, Seattle, Wash., report the sale of their noted herd sire, Melba's Prince, to Elmer Lenfest, of Snohomish, Wash. Mr. Lenfest has been laying the foundation for a good pure bred Guernsey herd for some time and anticipates making some attractive records in the near future from his Guernsey breeding and selections.

The Guernsey young sire Carney of the Willows was sold by Augustine & Kyer to Ralph Totten, Falls City, Wash., and several other applicants are pending for some of their choice young male calves.

The young Duroc pigs are coming on in fine shape. With plenty of clover pasture, peas, some mixed grain of wheat, oats and some barley, hog raising is a valuable adjunct to the Guernsey dairy farm of Augustine & Kyer.

Silos and Ensilage Crops

By H. L. Blanchard, Asst. Supt. W. W. Exp. Sta., Puyallup, Wash.

The following table shows the capacity of silos of several different sizes; the estimate of the number of cattle to which each size is suited is based on feeding each animal 40 pounds of silage a day for six months:

| Diameter,<br>Feet. | Height,<br>Feet. | Estimated          |                |
|--------------------|------------------|--------------------|----------------|
|                    |                  | Capacity,<br>Tons. | No.<br>Cattle. |
| 10                 | 20               | 30                 | 7              |
| 10                 | 26               | 40                 | 10             |
| 12                 | 24               | 55                 | 14             |
| 12                 | 30               | 75                 | 18             |
| 14                 | 26               | 80                 | 20             |
| 14                 | 30               | 100                | 25             |
| 16                 | 30               | 120                | 30             |
| 18                 | 32               | 162                | 40             |
| 20                 | 32               | 200                | 50             |

The Stave Silo.

The following patent round wooden stave silos are being sold within our State—all are correct in principle and when properly erected will give satisfactory results; they are in quite general use in the Northwest and no doubt are as durable as any stave silo made: Crown silo, Holland-Cook Mfg. Co., Tacoma, Wash; Winner silo, Pacific Tank & Silo Co., Chehalis, Wash.; Ideal Green Feed silo, De Laval Dairy Supply Co., Seattle, Wash.; Weyerhaeuser silo, Weyerhaeuser Lumber Co., Everett, Wash.;

Seattle silo, Hewett-Lea-Funck Co., Seattle, Wash.

There may be other makes of patent wood stave silos being sold in the State that the writer does not know about. The silos are sold assembled, ready to erect and an expert may be furnished by the company to superintend the erection. The foundation for the silo is provided by the farmer. The cost is from about \$200 up, depending upon the size and foundation construction. The value of a stave silo is measured by the quality of the material that enters into its construction. Oregon fir, when creosoted or painted with a wood-preserving paint, should last for a long term of years. Every stave, however, should be sound, straight grained and free from sap wood or bark. The purchaser ought not to accept a silo that has a defective stave.

The tar or preservative paint should be applied hot when possible. Dipping is the best method, but application with a brush will do. The staves should be well seasoned and when the brush is used two applications of the tar or paint should be made, that the material may penetrate the wood as much as possible. A good job means that the life of the silo will be greatly prolonged.

Home Made Stave Silo.

In the case where the construction



Mortgage Lifters

Have You a Mortgage on Your Farm?

IF SO OR NOT

BUY HIGH CLASS GRADE HOLSTEIN DAIRY COWS FROM THE SPOKANE GRAIN CO.

THE COWS WILL DO THE REST.

IF YOU CANNOT BUY COWS, BUY HOLSTEIN CALVES. WE HAVE BOTH FOR SALE, AND GOOD ONES. COME AND SEE US. IF YOU CANNOT COME, WRITE US.

The May shipment of high class cows is ready for immediate delivery.

Spokane Grain Company

Phone Sidney 444

4915 Eighth Ave. So.

SEATTLE, WASH.

WE ARE IN THE MARKET FOR A FEW

JERSEY OR GUERNSEY FAMILY COWS

Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

Brady Farm  
Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow.

E. R. BRADY  
Satsop, Wash.

Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs. A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

AYRSHIRES

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices. J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington

CASH FOR CREAM

Highest market price. Guaranteed test. Prompt cash payment for each shipment. We are also in the market for eggs.

MILLER BROS. CO.

1532 Commerce St., Tacoma, Wash.



of a stave silo is being considered and where the saving of from \$50 to \$100 becomes a deciding factor we would say to the farmer: Rather than do without a silo, build one yourself. We know that many writers discourage the construction of home-made silos, claiming that they are less durable than the purchased silo, and therefore more expensive in the end. There are ample proofs of home-made silos, of the stave type, made of our fir lumber, that are a success. Some silos that are sold from the factory are not a success by reason of defective material and especially poor staves, and therefore can not possibly last very many years. There is no difficulty about infringing on any patent in building a home-made stave silo ordinarily, as the patent cover only the special frames and doors. The farmer who has decided to build for himself ought first to select a location convenient to the stable. If possible have the silo outside the barn and in line with the feeding alley of the stable. Put in a concrete foundation. Excavating three or four feet below the surface will add materially to the capacity of the silo. Bring the concrete wall up to six inches or a foot above the ground level. The following concrete mixture is recommended: To one part of cement add two parts washed sand and four parts of gravel or crushed rock.

#### Crops, Handling and Mixing.

Practically all of the grass crops, corn, wheat, oats, peas, clover, etc., that are grown in Western Washington can be made into good silage, as has been demonstrated on many farms. Poor silage is evidence of mistakes and wrong methods somewhere in the operation, or a poor silo. The most of the hay made in Western Washington is poor stuff, yet the farmers do not say that the grasses and clovers are not good for hay. There is a reason for both poor silage and poor hay. That we find first-class silage made from all the crops mentioned proves such to be the fact. The way to get good silage from corn, clover, or any other crop, is to follow correct methods, otherwise inferior silage will be the result. These are a few self-evident truths that need to be repeated occasionally, since the farmer in his haste is apt to forget.

We must not cut our corn into the silo before it has become sufficiently mature. There is much evidence that corn in this State should pass the glazing stage and have about begun to ripen for the best ensilage. No doubt the quality of our corn silage will continue to improve from year to year as certain varieties become more and more acclimated. The best method of planting—in hills or in drills—will need to be worked out under the varying conditions. We find that among our most successful corn growers some plant one way and some the other. Under the drill plan an earlier maturity will follow when the plants are not too thick in the drill. Thinning to 10 to 12 inches is recommended with rows not closer than 30 inches apart. Under the other plan the hills may be 36 inches apart and be thinned to three good stalks.

It has been demonstrated that the cutting of clover or some legume into the silo with the corn improves the feeding value of the ensilage, by giving the feed nutrients a better bal-

ance, also clover containing considerable timothy or some other grass gives a better quality of silage than will straight clover, owing to the fact that clover is deficient in sugar. By mixture clover with such crops as corn, rye, wheat, timothy and the like, all of which are high in sugar, the entire mixture will be well preserved and palatable. The legumes being low in sugar do not have enough to prevent the fermentation of their high protein content which results in the objectionable smell of legume silage.

It is entirely practical in Western Washington to have a crop of rye, wheat or barley just entering the dough stage at the time when clover is first ready to cut and to cut the same into the silo with the clover, in the proportion of one ton of rye, wheat, etc., to two tons of clover or alfalfa. Some legume crop may also be seeded for the purpose of being cut into the silo with the corn crop and thus increase the feeding value of the corn silage.

The following crop mixtures for silage may be recommended: Fall seeded rye and vetch, corn and the third crop of clover or fourth crop of alfalfa, corn and oats and vetch, barley and oats and vetch, clover and mesquite or timothy or rye grass or orchard grass, clover, oats and vetch, wheat and vetch, oats and vetch or peas, straw and clover, or alfalfa in the proportion of one to four have been used with good results. The better practice would be to cut them into the silo together as well mixed as possible, rather than cutting in alternate layers.

#### When to Cut, Filling.

When the crops are approaching maturity they are ready to be cut for the silo. Corn should be cut well along in the glazing stage, the cereals in the dough stage, and the meadow grasses and clover well in bloom. Peas and vetch are ready when the first grains begin to harden.

By running the crops through a cutting box one increases the quantity that can be stored in the silo. The silage being packed better keeps better and with a greatly diminished percentage of waste, all of which more than offsets any difference in cost per ton. When the crop is put in uncut a horse fork is generally used for elevating to the top of the silo when it is either dropped into the center of the silo or onto a platform where a man forks it into the silo by hand. A better job may be done under the latter plan.

The equipment for cutting the crop into the silo consists of a power, either electric, gasoline or steam, a cutting box, and elevator, either endless chain or blower. The equipments are put out of a capacity sufficient to meet the requirements. A surplus of power and capacity is much more desirable than not enough. Wherever the cost of such an equipment makes its use impractical or prohibitive, it will become necessary for the farmers of a community to band together for its purchase and use.

#### Cost and How Used.

The cost of getting the crops from the field to the silo depends greatly upon conditions. Here is where the farmer can display his executive ability, and management. There need be no great haste or excitement about filling the silo. It does not need to be filled in a day or two. The cutting box should be adjusted so as to



## Do You Wish to Succeed?

Stock improvement is necessary if you would show the greater profit in the dairy industry. Select Holstein cows that produce and herd sires backed by the best families and breeding known to the breed.

## We Deliver the Goods

Cows, heifers and bulls. We carry in stock at all times a herd from which you may select stock that will meet all requirements. We invite you to call and inspect our offerings at all times. Write us for information and make appointment. At the present time we are selecting Registered and High Grades in Eastern Holstein centers, due to arrive about July 10th. Our name stands for merit, honesty and a square deal, endeavoring to help build up a practical dairy industry.

## VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.  
Please mention this paper

## Registered Guernseys For Sale

During the past month we have supplied several dairymen with choice pure-bred Guernsey sires. We have yet some fine young bulls of noted breeding to offer which we believe will prove to be valuable for dairymen seeking to increase the revenue of cream and butter from their herds.

Write us for particulars and prices.

Reasonable terms to responsible parties.

## Augustine & Kyer

115 First Street  
Seattle, Wash.

## Live Stock Market

Send for our quotations on cattle, hogs, sheep, poultry and hides. We buy stock cattle.

Try the parcel post service for our meats; anything in the packed line.

Occasionally we have some good dairy cows.  
Write, giving particulars.

## Tacoma Meat Company

1508 Pacific Ave.

TACOMA, WASH.

## Turner & Pease Co., Inc.

813-815-817 Western Ave., Seattle

Leading Manufacturers of Butter in the State

We pay cash for butter fat and eggs at correct market prices.

Flies Can't Stand It  
but it doesn't hurt the milk—use

**LILLY'S FLY KILLER**

freely on your stock—it'll save you money which means making money.

All Dealers 35c quart,  
\$1.00 gallon, \$3.50 for 5 gallons.



"Don't Sit on the Cow's Tail"

The CHAS. H. LILLY COMPANY, Seattle



cut the crop of corn in one-half inch lengths and all other crops in one inch lengths. A great deal of care should be exercised to have the silage well mixed, either with a distributing device or by hand. If corn leaves or any other light material accumulate in one place in the silo it will spoil. An effort should be made to keep the silo well tramped, particularly around the wall. It is best to have one man in the silo all the time during filling and if the silage is being put in rapidly and the silo is large there should be two men in the silo. It is not necessary to fill the silo in one day but it is best to put some silage in the silo every day until the job is finished. It is a good practice to put a load or two of low grade fodder or straw on top of the silage and to tramp well. If this is properly done there will probably not be more than two or three inches of silage spoil during curing.

During fermentation or curing the silage becomes quite warm and later cools out partly or altogether. This fermentation or curing is not necessary in order to prepare the silage for feeding. A person can successfully feed silage from the silo as soon as the silo is filled, but it will be necessary to feed three or four inches a day off the top of the silo for the first week. On the other hand well-preserved silage in a good silo will keep indefinitely.

The silo is often just as useful and just as necessary in the summer season as during the winter; in fact, it may be made an all-year-round insurance against shortage of succulent food.

chine, Silo, manure spreader, and all modern tools with full equipment. The registered sires used have excellent ancestral records the breeding being in line to get the full future herd into the A. R. O. class.

The feed raised consists of 10 acres corn for ensilage, 20 acres oats and vetch, also raise barley and vetch and a large acreage of good clover pasture. The feed bought is alfalfa hay and oil meal.

The herd is tuberculin tested every six months, no reactors allowed in the herd. The cows are also being carefully tested as to individual producing capacity.

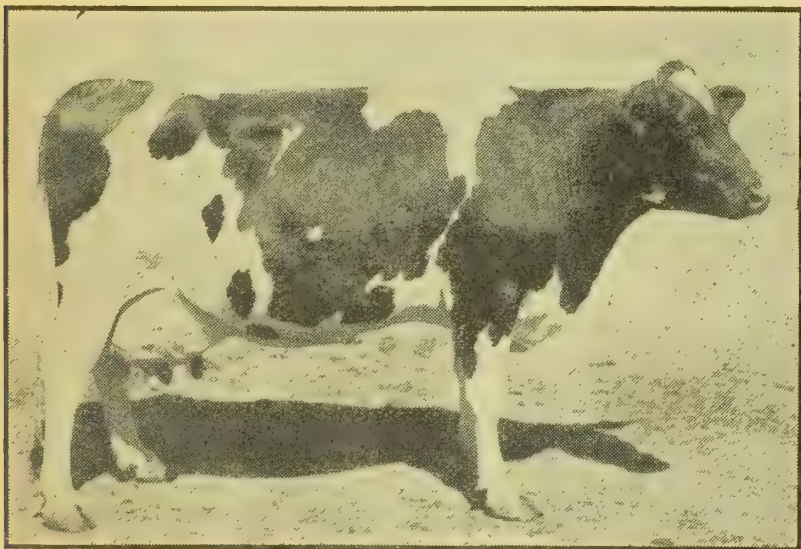
There is no cow testing association at this point but Mr. A. E. Smith would be glad to join such an association and boost for good cows in that district. The movement requires an initiation in which the state should be the leading factor for co-operation.

### REQUIREMENTS FOR CREDIT.

#### In Purchase of Dairy Cattle.

The committee on Cooperation and extension work, appointed at the last meeting of the Washington State Dairymen's Association has under consideration a practical credit guide for the purchase of dairy cows. The object being to establish specifications for its use by the borrower while safe to the lender of the funds.

The following outline has been suggested by Prof. A. B. Nystrum of this committee which invites comment pro and con also asks for further suggestions. There is considerable idle money in the banks and hands of individ-



Gerben Queen Johanna No. 85580, Grand Champion of Colorado 1911-1912-1914. She is a 100-pound-milk-per-day daughter of a 100-pound dam. For so great a producer she carries a wonderfully well developed flesh type indicative of great endurance. She is one of the few in which both the dairy and beef forms are exceptionally well developed, well up at the head of her breed. She is owned by the Woodcroft Farm, Pueblo, Colorado, indicating the kind of registered Holsteins bred at this noted farm.

**REGISTERED A. R. O. HOLSTEINS.**  
Owned by A. E. Smith, Sumas, Wash.

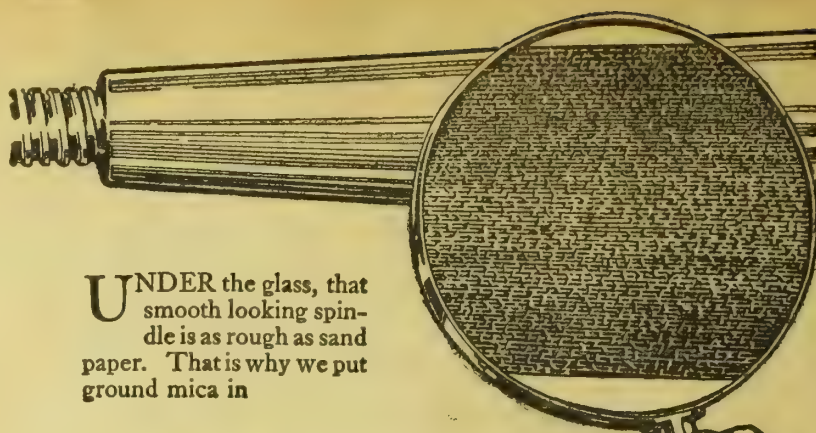
The excellent pure bred and registered Holstein herd of 100 cows owned by A. E. Smith, Sumas, Wash., is in fine condition.

There are 20 A. R. O. Cows, (no grades) and all making a good margin in profit in production of milk and cream which is shipped to Bellingham every day.

The farm consists of 160 acres mostly cleared bottom land, 2 good modern barns, up-to-date Sharpels milking ma-

iduals in this state which might be used in the development of the dairy industry providing a proper and safe system for its use in this direction is established.

The outline following sets a pretty high score. Any party of good character who can conform would certainly be a safe credit risk within reasonable bounds. On the other hand, those in position to offer loans can make deductions from this high standard to meet a local requirement as conditions may warrant.



**U**NDER the glass, that smooth looking spindle is as rough as sand paper. That is why we put ground mica in

## MICA Axle Grease

The mica fills up these microscopic cracks and pores and with the high grade grease forms a smooth, perfectly lubricated bearing surface for the wheel. That is why Mica Axle Grease makes loads pull so much easier with less strain on horses and harness. No other grease will go so far or last so long. Ask your dealer for it.

**Standard Oil Company**  
(California)

## JERSEY COWS

Some of the greatest producers in the world.

Buy 20 young cows or heifers from me and I'll head them with a Great Young Bull—FREE.

**E. L. Brewer**  
Satsap, Wash.

### PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.  
**Wm. Bishop, Chimacum, Wash.**

### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

**FOR REGISTERED DUROC JERSEY**  
bred sows and male pigs, write McK. Edwards, Valley, Wash.

### Electric Light Farm

### A. J. C. C. Jerseys FOR SALE

Son of Gertie's Brown Lad whose dam has official record of 653 lbs. butter in one year. The dam of this 5-months-old calf made over 10,000 lbs. milk and 595½ lbs. butter with first calf. Solid color, mulberry fawn, priced at \$100.00 for quick sale.

Burt Pease Ellensburg, Wash.

### Holstein-Friesian Bull FOR SALE

Hazelwood Hartog Lad, No. 73638, 3 years and 5 months old, whose dam Bonnie Lass Pauline No. 96724 has a record of 515.4 lbs. milk and 38.788 lbs. butter in seven days, and was a prize winner at the National Dairy Show at Chicago in 1912. For particulars write or come to see him. Tramm & Wackerbarth, R. D. 1, Box 57, Chelalis, Wash.

### Calves Without Milk

Cost only half as much as the milk raised calves. Increase your profits by using

### Blatchford's Calf Meal

The perfect milk substitute—the best since 1800. Write, today for free book, "How to Raise Calves." Your name and address on a postal is enough.



Blatchford's  
Calf Meal  
Factory  
Waukegan, Ill.

CHAS. H. LILLY CO. Seattle Wash.

Please mention this paper





## HOLSTEINS

### GREAT PRODUCING COWS

Those desiring to obtain Holstein cows producing milk well up to the 10,000-pound-per-year mark will do well to write, or call and see us, as we are in position to supply individuals or group lots of this class. Are you making preparations to buy, will you then please write us about your facilities for dairying, your plans of operation as to feeding, etc. The benefit of our experience to insure success is at your command. Under proper conditions and care dairymen are bound to succeed

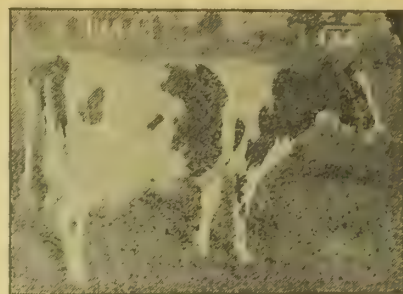
and financing is less difficult in frequent cases than may at first appear. We desire to make progressive dairymen realize that our interests are mutual.

Our Holsteins are selected with great care and intelligence and are offered primarily for foundation herds or as an acquisition for already established herds to such owners who know the value of "pure" stock. We buy the very best the Eastern market affords and prospective customers in buying of us have the certainty of satisfaction. 200

**JOHN F. JANSSEN, "The Quality Buyer"**

**523 Bailey Building**

**Phone Elliott 710**



## PURE BRED

head to select from. Liberal terms to responsible parties.

**Seattle, Wash.**

**HEALTH**—Only sound, healthy cattle to be bought with a certificate showing they have passed the tuberculin test within ten (10) days of the time of purchase, tests made under the direction of the State Veterinary Department. The utmost care should be exercised in seeing that the cows are not selected from herds having in them contagious abortion, nor having been exposed to it within nine months, and free from all other diseases.

**COWS**—Only cows that show evidence of being capable of producing 300 pounds of butter fat in a year and have an average test of not less than 3% are to be purchased. Heifers to be eligible to purchase must be from dams producing not less than that specified for cows, the heifers to be sired by pure bred bulls of one of the six dairy breeds (Holstein, Jersey, Guernsey, Ayrshire, Brown Swiss, or Dutch Belted).

If the cows are grade dairy cows they must be bred to a sire of the breed which predominates in the cow; other cows may be bred to a pure bred sire of one of the six dairy breeds.

**CONFORMATION**—Constitution to be shown by large heart girth, large barrel; and mammary system should also show good development, large milk veins, large udder with well placed teats.

**BULL**—In order that a bull be eligible to purchase, his dam and sire must be one of the six dairy breeds, and the dam must have produced not less than 450 pounds of butter fat in a year, or show evidence of being able to produce that amount. No bulls over ten years of age are to be purchased except in the case of an old bull which is a sure breeder and has daughters which have produced as much as the minimum requirement of his dam, in which case there shall be no age limit.

**BREEDING OF COWS**—All cows purchased must be bred to a bull that will meet the above requirements.

The owner of the bull is to be allowed to use the bull on any cows provided the bull is properly disinfected with a suitable solution after each service of a cow of which the owner of the bull is in doubt as to her freedom from contagious abortion, or other disease which may be transmitted through service.

**GENERAL CARE OF STOCK**—The stock are to be housed in the winter time in a comfortable, dry, well lighted, and properly ventilated barns and also to be housed during any

cold rains. Stock in pasture should have access to shelter and water at all times.

**MANURE**—Proper disposition will have to be made of the manure so that the cows are kept clean, and the land receive the fertility before it is allowed to leach away. The cows must receive good treatment at all times.

**FEED**—If possible all the roughage should be raised on the farm, and this roughage should consist of the leguminous hays as far as possible, and some succulent crop, such as is suitable for silage, or roots, etc. Only such feeds as are necessary to balance the ration should be bought.

The farmers should co-operate whenever advisable in purchasing sires, feed, in organizing dairy associations, creamery organizations, and in stimulating interest in dairying.

### CARLOAD OF HOLSTEINS FROM ILLINIOS.

Choice High Grades Shipped to H. S. ROYCE, TACOMA.

The True Republican of June 6th published at Sycamore, Illinois, states that Mrs. M. H. Stevens sold and shipped a carload of high grade Holstein cows and heifers, that week, to H. S. Royce, Tacoma, Wash., who personally selected the cattle.

There were 22 head in the consignment. All were well marked and large, and it was probably the best carload of milch cows ever shipped from Sycamore. They were not only pretty, but they showed that they were as good as they looked. A large number of the mature cows have produced as much as eight gallons of milk daily with only ordinary care. The average price paid was \$100 per head.

These cows were shipped via Chicago by express to the coast. The express charges were \$700.

### DAIRYING IN THE PALOUSE.

Mr. J. C. Graham, near Palouse, Wash., living in a grain district concluded he would break away from the grain farming monotony. This required a smaller farm than was necessary for wheat growing, then he bought 28 head of stock which looked something like dairy cows as pictured in his mind.

Besides making a fine revenue from milk and cream sold during the first couple of years his land increased in fertility.

According to Prof. A. B. Nystrum,

reporting to Hoards Dairyman, his oat crop yields ninety bushels to the acre, while his neighbors get but thirty; and although six tons of corn for silage is considered a good yield on average Palouse land, Mr. Graham gets ten tons. Yields from other crops are in the same proportion.

He now owns 200 acres, of which about 140 are fit for cultivation, the rest being the side of a butte, good only for pasture during the spring months. In 1913 these 140 acres yielded 200 tons of hay, 550 sacks of oats and barley, 100 tons of ensilage, 400 sacks of potatoes, and nearly \$230 worth of fruit, besides producing all the fruits and vegetables used for maintaining the household. The grain and hay is all used for feeding the stock on the place, most of it being fed to cows.

His herd consists of forty cows, of which four are pure-bred Holsteins, and twenty-seven head of young stock. From the forty cows he shipped a total of 44,700 gallons of milk during the past year for which he received \$8,940. Besides this he raised twenty calves, and supplied his family with milk and cream. From the sale of calves he received \$486, making a grand total, including the fruit, of \$9,656.

While the gross income seems low in comparison with the returns from 140-acre farms in older dairy districts yet when we consider that the neighboring wheat farms yield an average of twenty bushels of wheat to the acre, bringing a gross return only of \$240 for a farm of this size, we can see a big advantage in dairy farming.

### LIME FOR STOCK.

Experiments with stock feeding in the Pacific Northwest has led the State Veterinarian, S. B. Nelson, to determine lime should be added to the feed of stock. He recommends, according to an exchange, that stock raisers mix one part of lime and two parts of magnesium sulphate, feeding a half teaspoonful to a sow per day, and a whole teaspoonful to a mare. This has been found ample to remove most of the troubles relating to raising young stock which suffered from weak bones and hairless skins.

### GLEN TANA SALE.

The 189 pure bred and grade dairy stock of the Glen Tana Farm near Spokane was sold at auction by Limbarger & Gue for an average of about \$60 each. About 40 per cent. of them were calves.

### HOLSTEIN BULL FOR SALE

Chimacum Aaggie Cornucopia No. 64100, H. F. H. B., bred by M. S. Nye, Preble, New York. Calved August 15th, 1909. His grandam Aaggie Cornucopia Pauline is a 34-lb. cow. Sired by Aaggie Cornucopia Johanna Lad Junior No. 36, 974 H. F. H. B. Dam Onda Dorothy Concordia Paul No. 67853 H. F. H. B. A splendid animal, his youngsters are making excellent records.

A few choice cows for sale. Write for prices or call.

F. I. MEAD  
524 California Bldg. Tacoma

### O.I.C. Hogs

#### English Shire Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.



A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.  
THE E. N. PEASLEE CO.,  
Clarkston, Wash.

## Purebred Durocs and Berkshires

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

**Berkshires**—We are closing out some good breeding sows to make room for others. Under proper care and feeding we would like an opportunity to buy them back in the shape of good hams. Write today.

AUGUSTINE & KYER  
115 First St. Seattle, Wash

## Berkshires

Very prolific, early maturing stock of high quality. Some fine youngsters ready for delivery. Satisfaction assured.

PETER HANSON,  
Box 62, East Stanwood, Wash.

### THE RIERSON SPRAYER Saves Time, Trouble and TREES

Won blue ribbon, highest award, over all competitors at Salem Fair in 1911—1912. Has a 2 1/2 H. P. 4-cycle Waterloo Gas Engine. Special latest triplex spray pump. Will maintain 250 pounds pressure. There is more you ought to know. Write for Catalogue 87. RIERSON MACHINERY CO. LIGHTEST, MOST COMPACT 182-4-6 Morrison Street, Portland, Oregon



## SUCCESSFUL CO-OPERATIVE CREAMERY.

### A Year's Demonstration at Lynden Washington.

As evidence of what one of the successful creameries in the State of Washington has done the past year, G. Van der Griend, secretary of the Lynden Creamery Co. gives the following report which appeared in Hoard's Dairyman:

#### Resources

|                              |             |
|------------------------------|-------------|
| Real estate .....            | \$ 8,293.10 |
| Machinery and fixtures ..... | 4,145.93    |
| Supplies, butter, etc. ....  | 3,727.51    |
| Accounts receivable .....    | 11,843.40   |

\$28,009.94

#### Liabilities

|                        |             |
|------------------------|-------------|
| Capital stock .....    | \$ 2,970.00 |
| Bills payable .....    | 12,544.00   |
| Accounts payable ..... | 124.07      |
| Surplus .....          | 12,371.87   |

\$28,009.94

Lbs.

|                               |           |
|-------------------------------|-----------|
| Cream received .....          | 2,807,692 |
| Butterfat .....               | 703,324   |
| Butter churned .....          | 692,680   |
| Butterfat sold in sweet cream | 138,690   |
| Average test .....            | 25%       |
| Average overrun .....         | 23%       |

#### Gross Receipts

|                   |              |
|-------------------|--------------|
| Butter .....      | \$221,732.63 |
| Sweet cream ..... | 56,803.21    |
| Buttermilk .....  | 1,601.94     |
| Eggs .....        | 12,734.05    |
| Sundry .....      | 609.36       |

\$293,481.19

Cost of hauling, 1.2c per lb. fat.

Cost of manufacturing and selling, 1.6c per lb. fat.

Freight, express, etc., 0.4c per lb.

Received for butter, 32c per lb.

Paid for fat, 36.5c per lb.

Increase over 1912 in volume of business, 30%.

Number of patrons, 533.

"The Lynden Co-operative Creamery has been in operation for eleven years, and each year has proved to be better than the preceding one. The 18 persons who held their first meeting March 4, 1902, and who had to dig down in their own jeans to pay for the rent of the hall, certainly never dreamed that in ten years' time a business amounting to nearly \$300,000 would be the outcome of that meeting. They were only plain farmers of mixed nationalities—Americans, Scotchmen, Germans, Swedes, Hollanders. They had only just arrived from the Eastern states, and had invested their all in land.

"The condition of the roads and the distance from the railroad made it imperative at that time that they market their crop in the lightest possible package. Not alone did they see the necessity of marketing their crop in a small package, but in order to have any returns worth while they had to cut out all possible middlemen. They well understood that in co-operation lay their only chance for success, and that 'united we stand, divided we fall' was the keynote to successful co-operation.

"The records show that the first year after the creamery was organized the patrons received two cents less per pound butter fat than market price. The board of directors economized on every possible thing, including the buttermaker, and in this last economy we made our biggest

mistake. But although they economized on every possible thing, yet the minutes show that a resolution was passed to send a sum of one-half cent for every cube of butter manufactured to the National Dairy Union in order to help fight the oleomargarine people.

"The patrons, however, stood loyally by the creamery. They had confidence in their directors and the big majority of them understood that the mistakes that were made were mistakes of the head and not of the heart. Many worthy and well-managed co-operative enterprises disintegrate and fail because the members fall to criticizing the management, bickering and quarreling follow, and the enterprise goes to pieces.

"We struggled through the next two years, and gained enough ground to enable us to pay market price for butterfat. From then on we increased in number of patrons and number of cows with leaps and bounds. Each year saw new improvements. A new location was secured and a new cement block building was erected, which two years after its completion again proved inadequate. At present we are housed in a first-class building 44x104 feet, have two 1,000-pound churns and four 500-gallon ripeners.

"We employ seven men inside the creamery, have 15 wagons gathering cream, and a pay roll of \$1,200 a month. We are buying our supplies, such as salt, butter boxes, and cream cans, by carload lots. We are having a refrigerating plant installed that will cost in the neighborhood of \$3,000, and we are practically out of debt.

#### Confidence and Education.

"Now, what has contributed most to the success of this co-operative creamery, outside of the natural adaptability of this country to dairying, is the confidence which the patrons have had in their board of directors. This confidence was gained by the directors being open and above board with their patrons at all times. If mistakes were made they did not hide them, but they took the patrons into their confidence and told them all about it. They asked their opinions; they tried, above all things, to have them understand it was their creamery, and no big moves were ever made without first consulting them. No stock was sold for investment, but it was placed among the dairymen, preferably only one ten-dollar share to each man. No matter how many shares of stock one man had (they were limited to 10 shares) each man had only one vote. Only a 10% dividend was paid on the capital stock, and all profits made went back to the man who milked the cows. A sinking fund of one-half cent a pound butterfat was established at first, one-fourth cent later, and even less at the present time; out of which fund all machinery was kept in good repair and the needed improvements were made. The man who delivered the most cream paid the most in keeping up the cream plant, irrespective of whether he owned capital stock or not.

"The directors hold a meeting every month and no bills are paid until after the directors have placed their O. K. on them. The manager meets with the directors and brings all important matters before them. The

## HAMPSHIRE SWINE

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.

directors receive a semi-monthly statement of all the business done during the two weeks, which shows the details of the management; where the butter, sweet cream, buttermilk, and eggs were sold; gains and losses; cream received; average test; overrun; number of patrons, etc.

"The creamery has always been progressive. It has always tried to help educate the cream-shipper, for ignorant and unenlightened people have no place in a co-operative movement. For the last seven years the creamery has sent two or more of its directors to attend the meeting of the State Dairymen's Association, and through its efforts the meeting has once been held in our own city of Lynden. The year following, an agricultural school was held where we all were taught how to judge cattle for dairy type. Institutes were held and a demonstration train from the Washington College has stopped at our station and taught needed lessons. The dairymen were given every opportunity to learn and improve, and the creamery thrived and reaped the benefit in bigger loads of cream.

"Every patron shipping cream was entitled to have samples of milk tested free of charge and a great many made use of that privilege, until they saw the necessity of owning their own tester and keeping a record of each individual cow. When two years ago an effort was made to organize a cow testing association, it was discovered that so many did their own testing and kept their own records that not enough were left over to successfully have such an association."

## Duroc Jersey Hogs

Some Young Stock for Sale.  
W. C. P. Rocks and S. C. W. Leghorns  
Winner of the Egg Laying Contest  
1913 State Fair.  
H. W. TURNER  
Sunnyside, Wash.

## English Berkshires

Sunset Duke the 4th, 156579, heads my Registered Herd. Champion Sow 1912-13 State Fairs.

Write for prices and particulars.

J. A. SIMONSON,  
North Yakima, Wash.

## BERKSHIRES

Write us for Spring Pigs, Bred Sows and Gilts,  
WOODLAND FARM,  
Lacey, Wash.

## BERKSHIRES

Choicest Stock---All Ages  
NEWTON H. PEER  
TACOMA or QUINCY, WASHINGTON

SILVER BIRCH FARM  
BERKSHIRE PIGS  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3 NEWPORT, W.N.

## "THE HOG WITHOUT A HOLLOW"

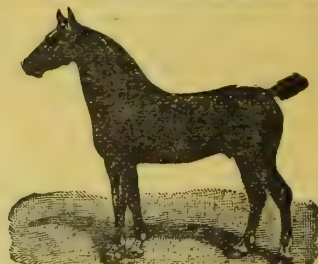
Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.

Warranted to Give Satisfaction.

## Gombault's Caustic Balsam



### Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for  
Curb, Splint, Sweeney, Capped Hock,  
Strained Tendons, Founder, Wind  
Puffs, and all lameness from Spavin,  
Ringbone and other bony tumors.  
Cures all skin diseases or Parasites,  
Thrush, Diphtheria. Removes all  
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,  
Sprains, Sore Throat, etc., it is invaluable.  
Every bottle of Caustic Balsam sold is  
Warranted to give satisfaction. Price \$1.50  
per bottle. Sold by druggists, or sent by ex-  
press, charges paid, with full directions for  
its use. Send for descriptive circulars,  
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

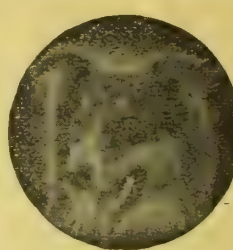
## BLACK LEG

### LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials.  
10-dose pkg. Blackleg Pills \$1.00  
50-dose pkg. Blackleg Pills 4.00  
Cutter's Blackleg Pill Injector 1.50  
Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct.  
Use any injector, but Cutter's simplest and strongest.  
Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh.  
Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly.  
THE CUTTER LABORATORY, Berkeley, California.

### Oregon Collie Kennels

Established 42 years.



Choice Puppies (either sex)  
Breeding Pairs  
Bitches in whelp and stud dogs for sale.

Send 2c stamp for illustrated catalog.

C. D. NAIRN  
Shadeland Farms  
E. F. D. 2  
Amity, Oregon

GOOD REGISTERED BERKSHIRES —  
Choice pigs, \$10 each at weaning time.  
W. D. GOOD, Mt. Vernon, Wash.

## DUROC PIGS

REGISTERED and REASONABLE. EITHER SEX

J. HANKS & SON, Ellensburg, Wash.

### Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD  
Route 1, Box 12 Fairbanks, Wash.

### REGISTERED DUROCS

(Immune to Cholera)  
All ages for sale, male or female, from prolific families.

Shamrock Wander heads the herd.  
Shamrock Daisy farrowed 12 pigs.  
Shamrock Rose farrowed 14 pigs.  
Selah Agness farrowed 16 pigs.

Write for prices.  
A. H. IRISH, Wapato, Wash.

### SOLID LIGHT COLORED JERSEY BULL CALF

Born October 10th, 1913; sire one of the best sons of Eminent; dam an American bred cow strong in the blood of Tormentor and Pedro; this cow is on test for the Register of Merit and in first six months produced 5665 lbs. milk. Price of calf \$75, registered and crated.

DAVID C. DILWORTH Opportunity, Wash.



**DANISH CO-OPERATIVE SYSTEM.**

The development of the Co-operative system in Denmark has been remarkable. The Danish farmer buys his household supplies from a co-operative store, another association furnishes concentrated feeds, his milk is sold to a co-operative creamery, his pigs to a co-operative packing house and he borrows money through a co-operative loan association. This system, says L. A. Rogers, of Washington, D. C., or perhaps more properly the enterprise and self-reliance which come with it, is no doubt responsible for the prosperity which is very evident with the Danish dairy farmers. The Danish farmers as a rule are large borrowers, but the loans are on very long period of time, interest rate very low and their income exceeds the expenditures, so that the interest and a small part of the principal is being paid each year while the farmers are enjoying the full benefit of the completely equipped plants and their co-operation system through which their prosperity has been accomplished.

**HOGS IN THE COAST SECTION.**

Mr. Plinney Shepardson, Kelso, Wash., is developing a fine lot of Berkshire hogs, realizing a good profit from a marketing stand-point as well as by selling pure-bred stock. Mr. Shepardson's practical demonstration with hogs is proof that Southwest Washington will some day produce great quantities of the clover-pea-fed bacon hogs. Barley and wheat and mixed grain will be used also in fitting for the market.

The "Seven Sisters" might have included some provision for reducing the number making up the legislative assembly, to provide for shorter sessions or less frequency of meetings. But the proposed measures serve well for educational purposes in the main. At present, our political propaganda has in a large measure lost its educational features.

**STABLE FLY.**

**An Effective Mixture to Repel It.**  
A mixture of fish oil (one gallon), oil of pine tar (two ounces), oil of Pennyroyal (two ounces), and kerosene (one-half pint) was found very effective in keeping the flies off live stock when applied lightly, but thoroughly, to the portions of animals not covered with blankets or nets.

**HOG RAISING INFORMATION.**

One of the best recent hog bulletins of the United States Department of Agriculture is No. 68, issued under date of February 25, 1914, written by Byron Hunter, Agriculturist for the Department of Farm Management, and is intended to encourage hog raisers in the Pacific Northwest, especially in the states of Oregon, Washington and Idaho. The title is "Pasture and Grain Crops for Hogs in the Pacific Northwest." This bulletin should be on the desk of every farmer in this section of the country and is to be had free by writing to the United States Department of Agriculture. The summary of the bulletin follows:

"During recent years the hog industry in the Pacific Northwest has been inadequate to supply the local demands for pork and pork products. This has caused the average price of

pork to be relatively high and has made it necessary to ship a large percentage of the hogs slaughtered and bacon consumed from east of the Rocky mountains.

"It is possible to provide pasture for hogs in most of this region during much of the year. In most localities it is also possible to provide crops that may be hogged off during several months of the busy season. The crops generally used for this purpose are wheat, field peas, corn and barley. By supplementing well managed pasture with the proper grain rations and utilizing the ability of the hog to harvest grain crops for himself, the average cost of producing pork may be materially reduced. These conditions offer an opportunity for profitable pork production in the Pacific Northwest on a much larger scale than at present practiced."

**TO CONSTRUCT A POULTRY HOUSE.**

Department of Agriculture Issues  
New Bulletin That Should Be of  
Interest to Poultrymen.

Poultry houses may be built more open and consequently less expensively in our Southern States than in the North, according to investigations of the U. S. Department of Agriculture. However, a house which gives satisfaction in Maine will also give good results in Texas or California. The best site for a poultry house in any location is one where good water and air drainage are available. The floor and yards will then be dry. The house should not occupy a low hollow in which cold air settles. Wherever possible, a southern or southeastern exposure should be selected, although this is not essential if there is any good reason for facing the house in a different direction.

"Poultry House Construction" is the title of the Department's new Farmers' Bulletin (No. 574), in which are explained the main features that should be considered, and in which pictures and plans of satisfactory houses are shown. Every poultryman who contemplates erecting new poultry buildings is urged to write to the Department for this bulletin, which will be sent him free on application, as long as the Department's supply lasts.

The "Intensive System" and the "Colony System."

There are two popular ways in which to raise poultry, the "intensive system" and the "colony system." The first of these aims to save steps, and accomplishes this purpose. Long stationary houses are used. It is easier, however, to keep the birds healthy and to reproduce the stock under the second system.

Under the colony system, the birds are allowed free range, the houses, which hold about 100 hens each, being placed from 200 to 250 feet apart, so that the stock will not kill the grass. This system may be adapted to severe winter conditions by drawing the colony houses together in a convenient place at the beginning of winter, thus reducing the labor during the cold months. The first system is more suited for hens used solely for the production of market eggs than for those used to breed stock.

**E. A. SHARP**

Breeder of  
**Progressive Royal White Wyandottes**  
America's Best Production

Toppenish, Wn., Apr. 24, 1914.

Northwestern Produce Company,  
North Yakima, Wash.

Dear Sirs:

Please ship us half-ton of the Albers Bros. Progressive Mash Mixture, one sack of hen grit and two sacks of Developing Food. I am going to try and work up a trade of this Albers Bros. goods among the local boys here and we may get together and use it exclusively. I am satisfied that I am getting better results from it than anything else that I have used.

Yours very truly,  
(Signed) E. A. SHARP.

This letter was unsolicited

**ALBERS BROS. MILLING CO.**  
Tacoma Largest Cereal Millers in the West Seattle

**Raise Pigeons**

They Pay Dollars while  
Chickens pay cents

The young, 20 to 25 days old, sell for 40 to 60 cents each (according to the season). The city markets are always clamoring for them.

Each pair of Pigeons will raise 18 to 22 young a year.

They will clear you, above all expenses, \$5.00 a year per pair. They breed the entire year. Twenty minutes daily will care for 100 pairs.

Always penned up out of the way  
Very small space required.  
All this is fully explained in this month's issue of our Journal; send for it; price 10 cts.

Reliable Squab Journal, Versailles, Mo.

S. C. Black

**MINORCA SALE**

For Particulars write

**BLANCHARD**

Poultry Yards

C. Westergaard, Mgr.

Hadlock, Wash.

**THE TRAP NESTED WHITE LEGHORNS**

Nine years continued trap-nesting

**PULLETS**

FOUR MONTHS OLD

THREE MONTHS OLD

EIGHT WEEKS OLD

**THE TANCRED FARMS**

Box 225

Kent, Wash.

**Partridge Plymouth Rocks**

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

**MRS. L. M. HALL**  
Puyallup, Wash.

The Vashon Island strawberry Growers give annual strawberry festivals inviting the people of Tacoma and Seattle to partake of strawberries and cream to their heart's content.

June 20th at Lisabeulla the event will be held this year as an expression of good will and kindly feeling of the Island residents towards their city cousins.

**SOUTHWEST WASHINGTON FAIR.**

The Southwest Washington Fair will be held between Chehalis and Centralia, August 24-29. The premium list is available on application to G. R. Walker, Sec., Chehalis, Wash.

**DUCKS****The Best In White Runners**

WE ARE NOW OFFERING FOR SALE

**Drakes, Trios & Breeding Pens**

Bred from the Best American Strain

Write for prices and booklet

**E. E. BLOOMFIELD**

Hillhurst, Wash.

Box 22D

**EGGS and BABY HICKS**

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks. Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

**FRED A. JOHNSON**

518 35th St., Tacoma, Wash.

**Rocks BARRED WHITE, PARTRIDGE and BUFF**

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

**MRS. D. F. ALWARD**  
Orting, Wash.

**White P. Rocks**

First old and first young pen, Tacoma Show. Five blues at King County Fair. My large flock is a leader both in standard and prolific qualities. Write for prices on Eggs and Stock.

**WM. SMITH**

Bremerton, Wash.

**ANCONAS**—Hardy, vigorous, easy to raise, great layers, large white eggs. My Anconas lay at 5 months and are prize winners. Hatching eggs, \$2 per 13 or \$10 per 100. **POULSON'S POULTRY YARDS**, 7312 22nd Ave. N. W., Seattle, Wash.

**REGISTERED DUROC JERSEY SWINE**—Bred sows and gilts; serviceable males and fall pigs; both sexes. E. N. Martin, Sunnyside, Wash.

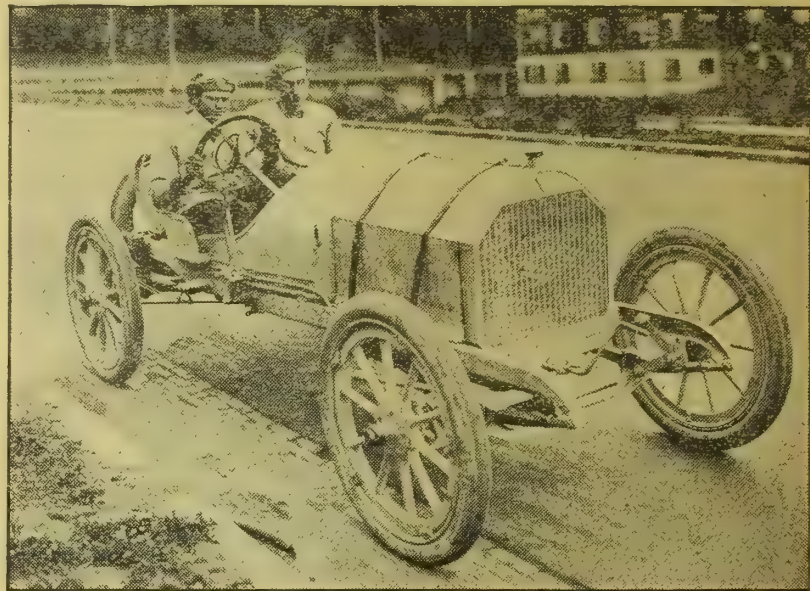
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A blue cross mark (X) opposite name on label of this paper indicates that renewal is now in order. The annual subscription is 50c, or three years for \$1.00. On the three-year term the cost is less than 3 cents per copy. Can you afford to miss a single number?

**N. W. HORTICULTURIST**,  
Box 1604. Tacoma, Wash.



# AUTO RACES



Readers driving their cars to Tacoma have the privilege of our garage at special rates during the Montamara Festo celebration. Register or leave your card at the office. We will call for or deliver your car on request.

## ALL TIRES SOLD AT WHOLESALE PRICES

At the speedway road races you will see some fast driving. The little Hudson which finished in one hour fifty-one minutes and sixteen seconds last year, winning third prize, run against much larger cars, will be replaced this year by the **PACIFIC CAR COMPANY SPECIAL**, owned by Terrien & Field, and built by the Pacific Car Company complete in their own shops.

This car is entered for the Chancellor & Lyon trophy, to be awarded for the fastest car between Seattle and Portland. Also entered for Montamara Festo races, Tacoma, July 3 and 4, and at Portland June 13 and 14, excellent showing was made. It is also entered for Dominion Day, the last of July.

Watch for results both in speed and endurance, for the Pacific Car Company is constantly a leader with these attainments in view.

## BIG BARGAINS in AUTOMOBILES

Here are a few bargains in used cars. Ask for special prices on others and on trucks.

- One 1912 Chalmers, 5-passenger, self-starter—\$975.
  - One Franklin, 5-passenger, in A1 condition, guaranteed—\$800.
  - One Franklin, 5-passenger, guaranteed—\$750.
  - One 3-passenger Ford—\$250.
  - One 1912 Cadillac, electric lights and self-starter—\$1,000.
- The above cars are guaranteed to be just as represented by us.  
Terms if desired.

REMEMBER THIS IS THE HOUSE OF SERVICE

# Pacific Car Co.

North Second and Q Streets  
(Point Defiance car line)

TACOMA, WASH.



## Professor Blanchard says:

"The first requisite of a good silo is good lumber."  
What the Professor says is true with emphasis on first which implies that there are other requisites.

We agree with the Professor and insist that good lumber comes first and foremost in the construction of a silo. This is why we are very careful to select the very choicest logs we can find for silo purposes, and after sawing these into staves, they are air-dried for six months or more. If you know anything about lumber, you will know what this means.

In the final manufacturing operations, this silo stock is carefully graded, according to our own strict grading rules always under the most rigid inspection, after which it is carefully milled into fine silo stock.



### OUR SILO STOCK IS AIR-DRIED

Irrespective of the guy lines and other hardware trimmings, the Weyerhaeuser Silo is just so much air-dried lumber of a superior grade—clear, one-piece fir staves—which can only be secured by purchasing the WEYERHAEUSER SILO, complete in one shipment.

The second important requisite of a good, air-tight silo is a convenient, labor-saving, time-saving, door that does not stick and is not lost around the farm. THE WEYERHAEUSER DOOR is just this and the small amount that it adds to the purchase price is very small indeed.

The third requisite is a reasonable price for this choice grade of AIR-DRIED lumber. Our well known superior advantages and facilities permit us to make lower prices than any other concern in the Northwest.

If you can use a two-piece stave silo—either in the clear high-grade fir described above or in our "select" we can name you still lower prices. In fact these prices are so low that any farmer feeding ten or more cows positively cannot afford to be without a silo. The splines are guaranteed to make the stave as rigid as any one-piece stave.

The scientifically designed and guaranteed anchorage system, the tested steel hoops and lugs, the malleable compound pressure latches and the easy swinging doors, the safe tread ladders—extremely valuable as they must be to you—add but very little to the price of the silo, as fully nine-tenths of the cost of the Weyerhaeuser Silo is in the exceptionally fine quality of lumber and the AIR-DRYING process—absolutely essential to a good silo and the first requisite, as a silo made from inferior lumber will not last any length of time.

### GET IN TOUCH WITH OUR REPRESENTATIVES IN YOUR LOCALITY

They are prepared to give you prices on the size silo you require, based on carload freight rates, and can therefore save you money. They will also tell you about our easy terms of payment.

FOR WHATCOM AND SAN JUAN COUNTIES: Royal Dairy Co., Bellingham, Wash.

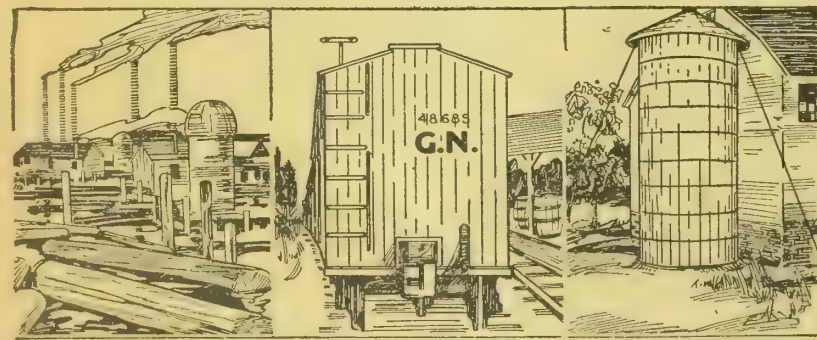
FOR JEFFERSON AND CLALLAM COUNTIES: Glendale Creamery Co., Port Townsend, Wash.

FOR SKAGIT COUNTY: Clear Lake Lumber Co., Mt. Vernon, Wash.

FOR WESTERN OREGON AND NORTHERN CALIFORNIA: Booth-Kelly Lumber Co., Eugene, Ore.

Write them for prices based on carload freight rates, if you live in these counties. Mr. Robert Burt is our field representative. Address 1009 Western Ave., Seattle.

Weyerhaeuser Lumber Co., Everett, Washington



## SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



# NORTHWEST HORTICULTURIST & DAIRYMAN

COLLEGE OF AGRICULTURE  
READING ROOM

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., JULY, 1914

No. 7

## Apple Grading Rules

Adopted by Leading Shipping Associations.

Apples will be classified in three principal grades which may be known by packers as No. 1, No. 2, and No. 3.

These grades to be designated by distinct bands for each grade or by brands in Blue, Green, etc., or by the terms Extra Fancy, Fancy, "C," etc.

Specifications of each grade are as follows:

**Grade No. 1 or Extra Fancy.** No varieties shall be admitted to this grade except those of recognized intrinsic quality.

**Physical Requirements.** Apples must be properly matured, clean, of natural color, shape and condition characteristic of the variety, sound, smooth and well formed, free from insect pests, disease, blemishes and injuries; worms, wormholes, stings, scale, scab, sun scald, dry or bitter rot, decay, fungus, water core, spray burn, limb rub, skin punctures or skin broken at stem.

**Color Requirements.** All red or partially red varieties must have at least 76 per cent of good natural red color, except Rome Beauty and Gravenstein, which shall show at least 50 per cent. red color. Banana and Red Cheek Pippin must have a distinctly colored cheek or blush. Yellow and green varieties must show the characteristic color of the variety.

**Size Requirements.** Apples in this grade shall not be smaller than 150 except the following, which may be admitted as small as 163: Gravenstein, Grimes, Jonathan, Spitzenburg, White Pearmain, Yellow Newtown and Winesap.

Yellow Newtown and Winesap, when packed specifically for export, may be as small as 200.

**Grade No. 2 or Fancy.** All varieties may be admitted to this main crop grade, with the same physical requirements as grade No. 1, except that slight deviation from proper form may be admitted, but not when clearly misshapen. Slight blemishes, such as limb rub, scratches and russetting may be admitted provided that no apple shall show aggregate blemishes of over one-half inch in area.

**Color Requirements.** Solid Red varieties must be at least one-third good red color. Striped or partially red varieties must be at least one-fifth good red color; provided that Rome Beauty and Gravenstein may be packed with a minimum of 10 per cent red color if marked "Light-Fancy."

Yellow, Green and blushed varieties must show the characteristic color of the variety.

**Size Requirements.** Apples in this



Lily of Willowmoor, the world record Ayrshire cow, 22,106 pounds milk in one year, owned by J. W. Clise, Willowmoor Farms, Redmond, Wash.

grade shall not be smaller than 175 except the following, which may be accepted as small as 200 if of color requirements of No. 1 grade: Aiken, Fameuse, Jeniton, Jonathan, Jefferies, King David, Missouri, McIntosh, Spitzenburg, White Pearmain, Winesap, Yellow Newtown.

**Grade No. 3 or "C."** This grade when used, shall be made up of all

merchantable apples not included in grades 1 and 2.

Apples shall be well grown specimens of one variety, reasonably uniform in size, properly matured, practically free from dirt, insect pests, diseases, bruises and other defects except such as are necessarily caused in the operation of packing. Apples shall not be smaller than 150 size.



The berry crops of the Coast valleys of Washington are large and find wide markets this season.

## Ensilage This Season

More ensilage is being fed this season in the Northwest than ever before and the farmers who have made preparation for a good quality find it an excellent substitute for the pasture now getting short on account of warm and dry weather.

At the Western Washington Experiment Station, Puyallup, the Crown silo was opened about July 1st, the oats and vetch had been kept in good condition. The corn put into the same silo last fall was also in excellent shape and relished by the stock. The corn, oats and vetch grown and made into ensilage in a good silo is one of the most valuable demonstrations the station could have made for the promotion of the dairy industry of this section.

Years ago many silos were erected in Western Oregon, but more than half of them were failures because they were not air-tight. The result was lost enthusiasm, a backset to this system of preserving the feed. While a good silo may cost a little more at the beginning than a poorly constructed one, it is the cheaper of the two and the only practical one. Had the farmers of Oregon built air-tight instead of leaky silos in the first place their dairy and live stock industry would have been far more profitable to them than at the present time.

The Experiment Station at Puyallup will continue to work out the problem of feed growing for silage purposes, such as the best combination of corn, vetch, clover, the proportions of each and the varieties for greatest efficiency in making up rations, either for the dairy cow or the feeder.

## PROSPECTIVE POULTRY INDUSTRY

There never was a better opportunity to get started in the poultry industry for egg production than the present fall. Some good pure bred stock is on the market at reasonable prices and feed is cheaper than for several years past. Eggs will not be less next year in price than has been the average for the past three seasons.

It is a good time to get into the game for those who plan to provide all necessary requirements and details to make the venture profitable. Learn all the rules essential for success and then by experience only can the exceptions, about ten to every rule, be ascertained. The locality, the time and the surrounding conditions all figure in the exceptions which cannot be taught in rules. The mastery of all these will pay well for the prospective poultry industry from the egg producing standpoint looks good.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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S. B. Nelson, Veterinarian.

Business with farmers promises to be very brisk during the fall months.

This being a busy month for many of our readers, in their harvest fields we have condensed to 16 pages for this issue.

Several of our advertisers are offering some good opportunities to buy dairy cattle. Those interested will carefully peruse their offerings.

When farmers really want adequate rural credit facilities on an extensive scale they will get together, frame up what is required, and then demand legal enactment.

Political rural credit schemes may serve theoretically and for entertainment, but as yet they have not quite touched the spot to afford satisfaction for the farmer in broad terms.

## UPLAND COAST FARMING.

Farmers of the upland Coast section are gradually making dairying a leading feature of their industry. Little cleared-up tracts of logged-off land are producing clover, peas and vetch; they have enough orchard to supply fruit for home use; some poultry and there is a regular income, even though small in many cases at first, it is a gradual increase and the home is made comfortable. While land clearing is expensive there are many natural advantages on this part of the Coast, such as mild climate throughout the year, abundance of fuel, vegetables and fruits without fail when properly planted and cultivated. In many cases while only a small amount of money is handled the living and the home have afforded health and considerable enjoyment. The increase in revenue from productivity of the soil is through correct methods of dairying, poultry raising, in some cases greenhouse products, and some of the fruits. Commercial pear growing is one of the promising experiments. With world-wide markets through the canal, the Coast fruit growers will find better sale for both canned and dried fruits.

## COUNTY ADVISORS AND STANDARDIZATION

The difficulty with the County advisors as expressed by some of our leading farmers is that the plan under which they work does not permit of promoting organizations which are necessary to standardize the products of the district or county. As an example, at the present time strawberry and raspberry growers don't need to be shown how to increase the yield, but it would be money in their pockets to be taught how to make a standardized by-product out of these fruits which cannot be marketed in fresh form.

Dairymen don't need to be shown how to grow cow feed, but they should have more cow testing associations and the promotion of organized efforts for a higher standard quality of butter. As an estimate one might venture the assertion that less than 10% of the butter produced in the Northwest would score 90 or above, perhaps more than 80 per cent. falls below 80 as compared with the choice rated at 95 points. This and next year is the psychological time to get dairymen into harmonious concerted activity for a higher standard product. Without further preliminary survey let the county man give so much of his services as the law will allow, in the foundation work for cooperative efforts to obtain standardization and high quality of product.

## COAST NURSERYMEN'S CONVENTION

The twelfth annual meeting of the Pacific Coast Association of Nurserymen held at Vancouver, B. C., last month was well attended by nurserymen and horticultural officers.

The leading position which the nurserymen have taken in the matter of inspection and standardization was a surprise to some of the government officials. Instead of resistance to rules and regulations the nurserymen favored all measures which are practical and in case of reasonable doubt where stock is under inspection the nurserymen showed a willingness to suffer loss rather than to be the cause of any injury to the fruit industries.

The convention wanted clearly defined lines in terms and definitions of what is clean and what is infected stock and a thorough adherence desired on the part of inspectors to adopted rules regulations with fairness and justice to both branches of the horticultural industry.

Uniform laws and methods throughout all the states and provinces is the aim and object for which the coast nurserymen are working. Standardization—a definite system, a definite mode of procedure and a definite product is necessary to eliminate needless waste and expense and to afford a reasonable margin of profit in the nursery as well as in the fruit or the dairy industry and that is the basis on which concerted action will be continued by the horticultural official and nurserymen as a result of this meeting.

The British Columbia cousins entertained most royally and high tribute was paid to the industry of propagating that which brings forth the best in fruits and flowers by the leading provincial and city officials of British Columbia. All members participating were inspired by renewed zeal and courage for continued and more skillful efforts.

## ALFALFA AND CORN GROWING

Corn growing has become a fixed staple with farmers in the irrigated districts of the Northwest. The 100 bushel per acre yield is frequently obtained where the land has been in alfalfa for several years. After growing corn for a year or more and the plan is to crop again with alfalfa seeding may be done between the rows of corn about the last of July but the ground in the cornfield should be made thoroughly level or there will be difficulty in cutting the alfalfa.

## COAST FRUIT MARKETING

The Puyallup Valley berry growers are evaporating red raspberries, black berries, and will evaporate some pears, prunes and apples.

The plants have canned a large amount of berries and cherries and the shipments of fresh fruit to eastern states were larger than for any past season. The markets are constantly increasing. A high standard quality has been the aim in every line and pack put on the market.

## FRUIT RATES VIA PANAMA

The direct water rate through Panama from north Pacific coast points to New York will be 37½ cents per 100 lbs. for dried fruit and canned goods. The apple rates to the eastern seaboard and to Europe will be announced in a short time. The rate by rail on dried and canned goods to the eastern or coast points was \$1.00 per 100, while the water rate with dock and all other changes will not exceed 40 cents per 100 lbs.

## ORGANIZATION FOLLOWED BY STANDARDIZATION

"Standardization is as necessary as organization in solving the marketing problems of the Northwest fruit men," says Professor C. I. Lewis, who has labored for eight years in the Agricultural College and among the growers of Oregon to bring about organization. This organization has been effected by forming local associations that are affiliated with vast distributing associations powerful enough to care for the growers' interests. But the work of standardization has only just begun.

"We must find out what standards are wanted by the trade, and then establish them accordingly. When once established, they must be rigidly maintained, so that dealers and consumers may know precisely what they will get when they put in an order. In fact it is only the standards that the trade cares anything about, and if it could standardize fruit through individual growers in sufficient quantities, it would be satisfied. But organization makes the establishment and maintenance of standards possible and the growers are now in a position to proceed with standardization.

## TUBER MOTH AND INSPECTION

State commissioner A. J. Cook, of Sacramento, Calif., has called a convention at Stockton, September 8 and 9 for the purpose of adopting measures to control the tuber moth infesting potatoes. California potato growers are being deprived of markets from all outside states. It looks as though this will compel Californians to inspect their outgoing products as well as those being shipped into their state. In this particular the Washington laws en-

force several years ago, but now inadequate, were in the lead of any state in the union.

The last legislature state of Washington in attempting to concentrate the rural interests so changed the horticultural law that it becomes inadequate.

Commissioner Morrison and his deputies are seriously handicapped in their efforts to clean up infected orchards and will request several needed changes when the law makers are in session again.

## FRUIT GROWERS INTERCROPPING

On the Lewiston Land and Water Company orchard tracts where the fruit trees are now in bearing, intercrops are grown this year of alfalfa, on some, peas on others and corn again on other parts. Both the main crop of fruit and the secondary legume or corn are doing well according to a statement by Prof. W. S. Thornber, The corn is the White Windus Dent.

The tendency among all fruit growers of the Pacific Northwest on both sides of the mountain ranges is to plant fruit trees in orchards farther apart and to grow one of the legume between the rows, in the irrigated district either alfalfa or peas, in the coast section, clover, peas or vetch. Then at certain interval years rotate with corn. By this means the fruit grower has a second source of revenue in case of partial or wholly a failure of his fruit, besides the soil is being kept in fertility with nitrogen.

## PREPARING FOR APPLE CROPS

The large shipping associations of the Northwest are directing attention to the needs of warehouse and cold storage plants to handle apples in refrigeration.

"The boxes used this year in Cashmere district, according to Mr. Sugrue, president of the Cashmere Fruit Growers Union, are the best that will go out from the Northwest. Heavier tops and bottoms. Six-penny nails will be used instead of five, as heretofore. Altogether the shipping will be more efficient. The heavier box will arrive at market without breaking, or bruising the contents."

## WASHINGTON CREAMERY ASSOCIATION

The Washington Creameries Association is composed of 50 county creamerymen with office at 1114 Western Ave., Seattle, O. C. Van Houten, Manager.

Mr. Van Houten is of the opinion that the best weapon with which to counteract the importation of butter is to raise the average quality of the Washington product. 27½ cents will hardly bring the best of the New Zealand and the highest scoring butter of the coast will sell above that figure.

## THE VALLANCE NURSERY

The C. C. Morse & Co. of San Francisco, Calif. have disposed of their nursery department to Messrs John and James Vallance, who have managed and conducted the nursery since it was started 7 years ago. The new firm will be known as the Vallance Nursery, Oakland.

The Vallance brothers have been engaged in the nursery business for 25 years in California and will continue in the same high class line of work as has been their custom for the many years past.





Mr. John Vallance, Oakland, Calif., President Pacific Coast Association of Nurserymen, 1914-15.

#### PANAMA-PACIFIC INTERNATIONAL EGG LAYING CONTEST

By I. D. Graham, Assistant Chief of the Department of Livestock.

Among all of our domestic animals and fowls there is perhaps nothing of real worth to humanity that comes more closely in contact with men to his profit than does the helpful hen.

Useful for food and as a producer of food; able to care for herself and yet responding to human attention as does few other living things; gathering of the waste products and destroying our insect enemies, the hen is at once a conserver and a producer of wealth and her daily tribute is an important item in our agricultural prosperity.

The hen is the creator of approximately six hundred millions of dollars of new wealth each year in this country and is a potent factor in the economy of all countries.

One of the chief features of the great poultry show to be held in connection with the Panama-Pacific International Exposition, as planned by Chief D. O. Lively of the Department of Live Stock, will be the International Egg Laying Contest which will begin on November 1, 1914 and continue for twelve full months. This contest will be conducted by the Department of Live Stock and under the supervision of the Poultry Division of the College of Agriculture of the University of California thus giving it the most expert supervision as well as placing it under a recognized authority.

H. West, Scappoose, Oregon, returned recently from the British Islands with 32 head of Guernsey and Jersey cattle. The importation of these dairy breeds has been heavy this spring. Most of the stock was selected for leading dairymen near Portland, Mr. West retaining but four cows and one bull of the Jerseys.

#### THOMPSON'S SALE OF HOLSTEINS

In another column is advertised the sale of Holsteins on the Thompson farm near Mt. Vernon, Wash. The offering includes a large list of registered stock the breeding records of which may be ascertained by the pedigrees.

Auctioneer Geo. A. Gue states:

The Registered cattle in a large part are direct descendants, from the noted herds of the Pierce Land & Stock Co., of San Francisco, Cal., in fact many of the females to be offered, are grand-

daughters of Beryl Wayne Korndyke of Riverside; whose sire was Beryl Wayne's Paul De Kol, and his dam, Belle Korndyke's daughter, the best daughter of Belle Korndyke.

"In talking with Mr. Thompson, relative to his sale, he tells me that they are an exceptionally fine lot of individuals, and in compiling the pedigrees, I am very well pleased with the lines of breeding represented, as some of our most note-worthy animals, appear in these pedigrees."

"This would seem to me to be a splendid opportunity, for the dairymen, who is desirous of laying the foundation for a registered herd; also for the breeder, who wishes to build up his herd, with some finely bred young cows."

#### QUALITY HOLSTEINS WANTED

Noted Purebreds and High Grade Stock Handled by Mr. Royce

While attending the noted auction sale of Holsteins at Chicago in June, H. S. Royce, of Tacoma, bought 8 registered Holsteins ranging in price from \$300 to \$800 each. Included in the lot brought home is Lady Reka Mooie 4th and her 16 months old heifer. She is a daughter of Lady Reka Mooie first at Wisconsin state fair last fall and 2nd at national Dairy show against 17 aged cows competing. Mr. Royce also brought home Mutual Piebe de Kol, the nine-year old bull, a son of Mooie Mutual de Kol. One of his brothers heads the herd of Wm. Evers & Sons, Lake Mills, Wisconsin. As an indication that stock of this class of breeding and authenticated records is in demand Mr. Royce has made numerous sales during the past month. Among them, 5 high class cows were taken by a leading dairyman east of the Cascades. One of the pure bred bulls was shipped by express to a Holstein breeder at Milton, Oregon.

With alfalfa hay and other feed at lower prices than for some years past the dairy industry will now develop more rapidly is the opinion expressed by Mr. Royce and he is pleased to note from inquiries coming that a larger proportion of prospective buyers than formerly want pure bred sires and cows both purebred and high grade with good authenticated records as that is the proper foundation for satisfaction to dairymen.

#### WESTERN WASHINGTON FAIR SPECIALS

Among the many valuable "Special Premiums" offered at The Western Washington Fair, Puyallup, Sept. 29 to Oct. 4, inclusive, are the following.

By The C. H. Lilly Co., Seattle, one Auto-Spray outfit (gasoline power) for the largest and best exhibit of tree fruits, by individual grower uniformly in size and color, and freeness from blemish to be particularly considered.

By Northern Pacific Railway Co., set (4 volume) Bailey's Encyclopedia of Agriculture, for the largest and best School Exhibit, as a whole skill and taste in arrangement to be considered as well as the exhibits themselves.

By Shute Incubator Co., Seattle. One 50-egg, Model A, "Simplicity" Incubator, for the best essay on incubation.

For other "Special Premiums" see regular Premium List, which may be had by addressing J. P. Nevins, Secretary, Puyallup, Wash.

#### OFFICERS PACIFIC COAST NURSE- RYMEN

The retiring President, Richard Layritz and his co-workers, Will A. Elletson, Secretary, Chas. T. Trotter, and other members of the executive com-

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## EGGS ADVANCING

And the moulting season is coming on—It is essential that you use the very best mash food obtainable.

**Albers Progressive Mash Mixture** contains Kaffir Corn Meal, Proteina, Oat Meal, Barley Meal, Corn Meal, Bone Meal, Pea Meal, Wheat Meal, Rolled Oats, Linseed Oil Meal, Charcoal Salt and Blood Meal.

**Albers Progressive Scratch Food** is different from other scratch foods—It contains Kaffir Corn, coarse Proteina, Hulled Oats Potted Barley, Cracked Corn, Ground Bone, Sunflower Seed, Peas and Wheat.

These two feeds fed with Oyster or Clam Shells and green stuff is all a hen requires.

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**MINORCA SALE**

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**BLANCHARD**

Poultry Yards

C. Westergaard, Mgr.

Hadlock, Wash.

mittee were generously faithful in assumed duties at the convention.

Mr. John Vallance, Oakland, Calif., was elected president. Executive com-

mittee, D. W. Coolidge, Pasadena; John Gill, West Berkeley, and F. H. Wilson, Fresno; C. A. Tonneson, Secretary-Treasurer.

## Field Experiments with Crown Gall

A Preliminary Report to the Pacific Coast Association of Nurserymen.

By H. S. Jackson, Plant Pathologist, Oregon Agricultural College.

On account of the increased appreciation on the part of plant pathologists, as well as the orchardists, of the importance of preventing the spread of plant diseases through the dissemination of bulbs, cuttings, seeds, nursery stock, etc., there has been a growing tendency towards a much more rigid inspection of such commodities in recent years than was formerly the case. The reports of the results of research work that has disseminated in regard to crown gall has led to a better knowledge on the part of growers, so that in general they have become more familiar with its appearance as well as the serious nature. This has resulted in a strong sentiment on the part of the growers against planting diseased stock, and justly so, in view of present information. All this has contributed to the result that the nurseryman, who must needs destroy all diseased trees has suffered appreciable losses.

On account of the nature of the diseases it is necessary from the practical standpoint to study it with reference to its effects upon each particular crop. It is not possible to generalize, since there is a great difference in the degree to which the different crops are attacked. It is well recognized, for example, that stone fruits are more seriously affected than pome fruits, and that there is a greater difference in the amount of infection on certain kinds of stone fruits than on others; also that the disease is more important in certain sections of the country than in others.

There has long been a feeling that the disease was not as important on apples in the orchard as supposed by some workers. The experiments of



Hedgecock as reported in Bulletin No. 186 of the Bureau of Plant Industry have indicated that the disease is not in general a very serious orchard disease. It is, however, very common in the nursery, and conscientious nurserymen destroy, in many cases, a large percentage of their trees, due to the attacks of this disease. On account of this fact, the writer was urged by Mr. MacDonald, of the Oregon Nursery Company, to take up an experiment with them to demonstrate just what would occur under certain definite conditions.

Accordingly an experiment was arranged in co-operation with Mr. MacDonald and the Oregon Nursery Company with the Oregon Experiment Station. Under this agreement Mr. MacDonald furnished the land and the Oregon Nursery Company the labor necessary to plant and care for the trees, and the writer, acting for the Oregon Experiment Station is to take charge of the experiment and to give a limited amount of time to observations and reports on the condition and growth of the trees from time to time.

The purpose of this experiment is not to question the advisability of preventing nurserymen from selling infected trees, but rather to get at the facts, or, at least, to contribute something definite to our knowledge of just what damage occurs in the orchard from planting diseased trees.

In planning this experiment it was recognized that in order to obtain any definite results it would be essential to work with a large number of trees. Accordingly arrangements were made with the Oregon Nursery Company to save their cull trees for this experiment. It was decided to work with as large a number of trees as possible and to plan the work so that the experiment could be conducted for a period of years, carrying the trees well into the bearing period if it later seemed desirable.

The land donated by Mr. MacDonald was a piece which had been cleared a year or two before from a rather dense stand of second growth fir. The land had not been previously used for any crop. Due to various delays the first planting was not made until very late. The trees, however, had been kept in storage and were in good dormant condition. Plantings were made on April 24th and 25th. The trees were planted in rows seven and one-half feet apart and about three feet 7 inches in the row. Alternate rows of healthy and diseased stock were planted in each case. The diseased trees were carefully sorted as to the kind and degree of infection. Trees affected with hairy root were kept by themselves; crown gall trees were sorted into two grades: (a) bad, and (b) medium to slight infection, and in some cases a separate grade, known as woolly knot was made. This form is in appearance a sort of a combination between hairy root and crown gall.

Eighteen varieties of apples were used in the experiment in varying quantities. The trees were planted 45 to the row, and 48 rows were included in the experiment. Over about one-half of the ground additional trees were also temporarily planted between rows with the idea of taking them up after growing them two years. In all 2920 apples were planted from the Oregon Nursery, and a few trees were also received from other nurseries, and included in the temporary planting between the rows. These were, however, not in sufficient numbers to make a good experiment. The nurseries contributing the trees mentioned above were the Milton Nursery Co., Milton, Oregon; Quaker Nursery Co., Salem, Oregon; and the Southern Oregon Nurseries, Yoncalla, Oregon.

Unfortunately, it was found in the summer of 1913 that a connecting switch between the Oregon Electric Railroad and the United Railways, which come together near Oronco would necessarily have to pass through the experimental plot. Accordingly on September 29, the writer visited the experiment and removed rows 9 to 17 inclusive, in order to make way for the railroad trestle.

At that time the trees showed that they had made a very good growth, but on close observation no appreciable difference between trees which were diseased when planted and those which were healthy could be observed. In taking up the trees notes were made upon various rows. The following are extracts from notes made at that time:

Row 9, 45 healthy Winter Banana trees.—All trees free from crown gall. Good growth on roots and tops in general. Four trees in this row died at the roots from causes which could not be determined.

Three trees died at the top, roots still alive.

One tree showed no development at top but was still alive.

Row 10, planted with 45 Winter Banana trees showing medium crown gall. These had made good growth, were all alive, both roots and tops.

No difference in growth could be observed between rows 9 and 10.

Row 11, 45 healthy Winter Banana trees.

No hairy roots or galls developed on these trees, but six trees were found dead at the root due to causes not known.

One tree was missing.

All trees had made very little growth in top or roots, cause not clear.

Row 12, planted with diseased Winter Banana trees.

Twenty-five crown gall, slight to medium; 10 with woolly knot; 10 crown gall bad.

Of the twenty-five trees one showed new gall on roots, one tree was dead at the top, roots alive, cause not known; one dead at the roots but apparently not from any bad case of crown gall, cause not clear.

Of the ten woolly knot trees it was noted that very little growth had been made below the galls; good growth of roots at the end and above. There was some new gall tissue. Trees made healthy growth at top.

Of the ten trees with bad crown gall, two showed new growth of tissue on the old galls, some showed development of new galls. All made good root growth above the galls, but very little below, good top growth.

Row 13 was composed of 45 healthy Gano trees.

Four trees in this row showed slight development of gall-like tissue at the ends of the old roots, possibly some of this may have been due to abnormal callus; otherwise the roots were healthy, and the trees had made good growth at the tops.

Row 14, planted with 45 Gano trees affected with hairy root. Trees in general showed good growth; majority of the old hairy roots were dead. Some new hairy root development evident, but in general not as abundant as pre-

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—The kind that is light in color; never blackened or burned.

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Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.

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| 24 in. long, 7 in. wide | 18.00    |
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Send for our catalogue. Agents wanted.

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## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100.

Write for mating list and grit machine circular.

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viously. In general, good root growth had been made with some slight tendency to sprout at the root, particularly at the base. Apparently no new growth of galled tissue except one tree which showed some new tissue, but was apparently a woolly knot type that had become mixed with the others.

Row 15, planted with 45 healthy Gano trees; showed no gall development. Good growth on roots and tops.

Row 16, planted with 25 diseased trees showing Crown Gall slight to medium and 20 with woolly knot.

These trees showed good top growth, fairly good root growth, but very slight development of roots below the galls.

Row 17, planted with 45 healthy Stayman Winesaps. These trees showed no development of galls and in general were in good condition.

The orchard was again examined on June 13, 1914. In the meantime the trees had been heavily and uniformly cut back. The new growth was, in general vigorous, and no difference could at this time be noted between healthy rows and diseased rows of trees. In all the remaining planting there was found to be 47 trees which had died. Many of these had died from the top.

The writer found no correlation between the number of dead trees and their condition when planted, but in one case found the difference was in favor of the diseased trees, since 8 trees were found missing in one row of healthy Winter Bananas, and only 1 tree missing in a row which when planted was diseased. Other causes, however, may have accounted for this trouble since these trees were in the vicinity of the trestle work and might have been injured at that time as the construction work was in progress.

It is evident that it is too early to attempt to draw any conclusions from this experiment at the present time, but it is hoped that more definite data may be obtained within another year. It is the plan at the present, to take up half the orchard during the fall of 1914 and carefully examine the condition of the roots and top. The orchard is so planted that equal number of both healthy and diseased trees can be taken up leaving the trees on a square 7½ feet apart. It is planned to take up the trees as they become crowded in growth and note the relative root development.

#### Suggested Experiments.

Beside the type of experimental work as indicated in the above report there are several suggested lines of field work with crown gall that it would be advisable to take up as opportunity offers. Obviously the solution of a problem of this sort would be the obtaining by selection or otherwise of resistant varieties. Since practically all of the serious trouble with crown gall on trees occurs below the surface it is obvious that the search for disease resistant stocks is the logical method of attacking the problem along this line. The writer understands that Prof. C. O. Smith, of the University of California, located at the Whittier Station is investigating the disease resistance of various species and varieties of stone fruits in an effort to find a stock which may be to a large degree resistant to crown gall. It is reported that his results so far obtained give promise of culminating in something of great practical value.

It has already been shown by Hedgecock and others that there is a great difference in the susceptibility of different varieties of grape to Crown Gall, and that in sections where Crown Gall is serious on the grape very great beneficial results have been obtained by using stocks which are relatively resistant. Results of this work have been reported in U. S. Department of Agriculture, Bureau of Plant Industry Bulletin 183, and in New Mexico Experiment Station Bulletin No. 85.

It is possible that something in the same line might be attempted with pome fruits in an effort to find stocks that are more resistant than those which are in use at the present time.

Experimentation looking towards the best methods of preventing infection in seedlings would be a profitable line of investigation, inasmuch as it has been shown that the larger part of the infection in nurseries begins in the seedlings.

Experiments in the treatment of seedlings planted for budding purposes might be conducted in an effort to determine whether the amount of the disease could be reduced in this way. It is also believed that a study of methods employed in nursery practice at present should be conducted in an effort to determine if there are any methods by which the amount of Crown Gall and Hairy Root could be reduced.

Experiments looking toward the best cure for diseased trees would lead to valuable data. It is possible, also that methods might be devised by which the diseased trees could be treated in some way, that would render them suitable for planting.

## AGRICULTURE

## The Basis of Prosperity

### TILE FOR DRAINAGE.

#### Cement Disintegrates in Acid Soils.

Last fall I hauled up forty odd loads of sand; ordered a tile making machine on ten days option and got ready to put in a mile of cement tile. However, just before my ten days option had expired, I found that cement tile went to pieces on my neighbors' farmers, and so shipped the machine back. Being of interest to farmers generally I will give a history of the matter up to

date with added information as it comes to hand.

Cement tile, being alkaline, is dissolved by acids. I have dissolved one in five minutes with muriatic acid; over night in vinegar; in three months in a peat soil. It is well known that silos either solid or plastered with cement, need to be re-coated every time the silo is filled, as the acid generated by the ensilage eats away the cement.

#### The Litmus Paper Test.

Before laying any cement tiling a farmer should get a nickle's worth



**H**ARNESS is expensive. The longer your harness lasts, the more money in your pocket. An occasional application of

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keeps your harness in first-class condition—just the way it came from the shop. Eureka closes up the pores, preserves the fibre, and keeps out moisture, dust and sweat. It keeps your harness strong, flexible—jet black. It **pays** to use it. Dealers everywhere.

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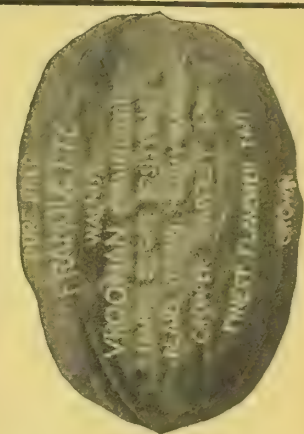
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## Walnuts in the Yakima Valley

Mr. J. B. Elliott, of North Yakima, Wash., writes us:

"I have six walnut trees eight years old which have borne a fine crop of nuts for the past two years. When these trees were two years old the temperature dropped to 20 degrees below zero, killing peach trees at my place, but the walnut trees came through uninjured. If I had the land, I would plant a commercial walnut orchard, as I believe the walnut is going to be a winner in this valley." The essential feature in a successful walnut is hardness, size, quality of meat and regular annual bearing tendencies. All of these characteristics are found in the VROOMAN PURE STRAIN FRANQUETTE, unquestionably the leading walnut for the Northwest. Are profitable for nuts, or useful as shade trees. Write today for our free, handsome, illustrated booklet giving full and reliable walnut information.

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Orencia, Oregon

Competent salesmen wanted.

of blue litmus paper at the drug store and test his soil. If there be acid in the soil it will turn blue litmus paper red—AND CEMENT TILE WILL GO TO PIECES! In some parts of Whatcom county the soil is sweet, and cement tile lasts. But in



my neighborhood all soils are sour. Peat is of course the worst, sometimes eating up cement tiles in three months—how much sooner we do not know, as they were not dug up (or rather dug "for") until three months had passed. At that time there was nothing left except a streak of sand. In clay they last six months to two years.

Even in gravel they go to pieces. In one case there could have been no seepage of peat water, as the tiles were laid just below a gravelly knoll—lasting only a year.

#### Can Anything be Done?

At my request the State University took the matter up, sending up Dr. H. K. Benson. After a thorough investigation we all agreed that the acidity of the soil was the cause of the trouble.

Next several cement companies sent up an expert. He dug up half dissolved cement tiles; took samples of the soil for chemical analysis and reported his findings.

Finally the State University and Mr. A. F. Krabbe, of the Bellingham (Balfour) Portland Cement Co. arranged for a series of formulas, seven in all I believe were agreed on. There were different sorts of cement; also various ingredients, as stearic (waterproofing) acid; oiling; covering with naphtha, etc. These seven sorts of cement tile will be marked by fastening a brass tag to each tile; then laying them in peat in order No. 1; No. 2; No. 3; and so on; then beginning with No. 1. and repeating. 2,000 feet of such tile have been made and will soon be laid.

The aim is to find something that will last and still be cheap.

Mr. Jones, of Seattle, hearing of our experiment, has sent me some conduit piping, made of paper pulp saturated with naphtha. This also will be laid with the cement tile and tested out.

It will probably be a year or more before the final report will be made; but it is safe for farmers to test their soils and NOT use cement tile when the wet soil turns blue litmus paper red.

#### Why Use Cement Tile.

There have hitherto been two reasons urged for using cement tile:—

1. It is POROUS, letting water THROUGH THE TILE as well as through the joints between the tiles.

2. Cement tile can be made at home, saving the hauling and so made is much cheaper than clay tile.

#### Here on the Coast.

As to the first reason it is void, for all cement manufacturers advise making a 1:3 mixture, which when rightly made is practically impervious to moisture. A 1:4 mixture, when made fairly dry, will permit water to run THROUGH the body of the tile; but such tile goes to pieces very quickly in a moderately acid soil. In the proposed trials there will be no 1:4 mixture used.

#### Exorbitant Price for Clay Tile on Puget Sound.

Regarding the second point, cheapness, we are still at sea, as we do not know just what the various mixtures will cost; but we do know that clay tile, here on Puget Sound is wholly out of keeping with prices in the East.

In Iowa, Illinois, Minnesota the price of 3" clay tile is usually \$2 above the price of brick. That is if brick is \$10 then 3" clay tile will probably be \$12.

It is this RELATION to which I wish to call attention. Labor is better paid here than in the East and we who are not acquainted with the details of the business are not in a position to determine the cost; but what I have never yet had explained to me is why there should be MORE DIFFERENCE between brick and tile here than there.

Here brick is about the same as in Iowa. In Bellingham we can get brick for \$10 just as we did at Cedar Rapids, Iowa.

There 3" clay tile was \$12—here it is \$27!

I have talked with quite a number of manufacturers about this point. They always get away from the point of RELATIVE PRICE. They talk about wages and space and sundry costs ALL OF WHICH ARE WHOLLY BESIDE THE POINT!

A 3" tile is no bigger in Washington than in Iowa. Presumably a Washington man will make as many brick and as many tile in a day as will an Iowa workman.

Then why a difference between brick and 3" tile of \$2 in Iowa with a difference of \$17 in Washington.

\$42.50 Per 1,000 for 4" Tile.

This is the local price. Buying in carload lots (and standing all breakages) one can get lower figures.

Those tile are not well made. Very many are broken at the ends; are rough at the ends (stopping the flow of water) and are not specially hard burned. \$32.50 in car lots is the best I had for a long time, (this firm would give a written guarantee to RELAY any tile going to pieces within five years). Finally I had an offer of \$27.00 for 4" tile. But this is still out of all reason.

#### Need of Tiling.

Here in Whatcom county we have the latest spring of any county on Puget Sound, being the farthest north. In order to get crops harvested before fall rains we need to get them started as early as possible. So that in addition to the usual reasons (greater root development, evenness of tilage, etc.) which influence other sections we have this above all others—to beat the fall rains.

Miles upon miles of cement tile have been laid—and much of it has gone to pieces—all of it where soils are acid.

Individual farmers will have to lay 3 miles to ten miles each; just as soon as they can get good tile at a fair price.

#### \$20 for 4" Tile.

I have yet to see any reason why good 4" tile cannot be sold at a profit for \$20 per 1,000 ft. Considering the vast demand for tile it should be furnished at this figure and still leave a fair profit for the manufacturer.

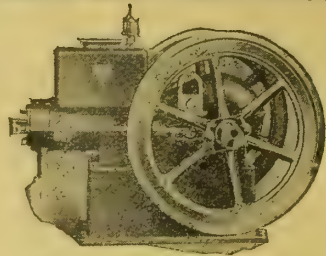
There is considerable talk of a co-operative tile factory here in Whatcom county. All that is necessary is a man to spend a little time getting farmers together, through the Grange or otherwise.

The paper-naphtha tiling has the very great advantage that there will be no breakage (buying clay tile by the car load one has no assurance as to what he is getting, as he has to stand all broken tile); and also that the paper-naphtha tile is very light—about one pound per foot for 3" tile.

It has not been tested as tiling, but has stood well for sewers.

## Alpha Gasoline Engines

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Stationary

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THE ALPHA GAS ENGINE doesn't need a skilled mechanic. It is so well built that it plugs right along like a steady well-broken horse.

THE ALPHA IS A GOOD ENGINE for any purpose, and because there is no mystery in either its construction or operation, it is an ideal engine for ranch use.

IT ISN'T BUILT OF ROUGH castings and bolted together. It is made from the best of material, and the workmanship and design are high grade in every particular.

THE ALPHA ENGINE STARTS AND RUNS on a slow-speed, high-grade, built-in magneto, which is a big item as it means no batteries, no coils, no trouble.

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Write for new illustrated Alpha Catalog A.

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Full Line Shade and Ornamental Stock

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

Salesmen wanted.

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Prices on Request.

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Here are a few bargains in used cars. Ask for special prices on others and on trucks.

One 1912 Chalmers, 5-passenger, self-starter—\$975.

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One 1912 Cadillac, electric lights and self-starter—\$1,000.

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Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



## Who Knows?

It will be a year or possibly more before we know the cost of cement tile that will stand up in our acid soils. Meanwhile who knows exactly what clay tile should cost? I do not profess to know anything beyond this fact—that in Iowa 3" clay tiling commonly sold for \$2 more than the price of brick at the same plant. Will some of our Puget Sound manufacturers explain why 3" clay tile costs \$17 to \$20 more than brick here on the coast?

There is a \$1,500 machine that will dig 60 to 100 rods of brick a day BETTER THAN CAN POSSIBLY BE DONE BY HAND. All we now need is a fair priced tile; either acid proofed cement, or clay. Can any reader of the N.-W. HORTICULTURIST furnish the needed data.

W. H. KAUFMAN.

Bellingham, Wash.

## ADVANTAGES OF THE COUNTY AGRICULTURIST

Byron Hunter, Vice Director, Washington Bureau of Farm Development.

The employment of an experienced, practical and scientifically trained man who devotes his entire time to improvement of agriculture within a county has now become a national movement. Practically every state in the Union has adopted the plan and Congress has affixed its stamp of approval by the passage of the Smith-Lever Bill, the funds from which will be available July 1st, 1914, to assist the states in this work. At the last session of our own legislature the importance of this movement was recognized by the passage of a law authorizing the county commissioners of each county to employ a county agriculturist.

Speaking generally the following are some of the benefits that a county may derive from the services of a competent man in this work:

1. During recent years important agricultural information has been worked out by the various State Experiment Stations and the U. S. Department of Agriculture that, if properly put into farm practice, would result in a large financial gain. Much of this information never reaches the farm in an effective way.

The application of known principles and information to the improvement of the agriculture of a county may be illustrated by a few of the things the county men are doing: Dairying is the leading feature of the agriculture of Wahkiakum County. When the County Agriculturist was employed less than a half dozen dairymen were making systematic effort to determine which of their cows were profitable and which were unprofitable. A campaign to improve the dairy industry was started immediately. This included weighing and testing the milk from the individual cow, the use of better sires, and the feeding of more nearly balanced and economical rations. Through the cooperation of 54 dairymen the milk from 740 cows is being weighed and tested and 15 registered sires have been placed at the head of as many herds where scrub sires were used before.

Spokane County, it is estimated, has \$30,000,000 invested in the apple industry. Last year only 25 carloads of extra fancy apples were marketed in this County. Approximately 80% of the apple crop was affected with

scab. This disease can be controlled by proper spray methods, and the County Agriculturist, upon assuming his duties, immediately started a campaign for clean fruit of proper size. He is receiving the hearty cooperation of the growers.

In Walla Walla County one of the most serious pests with which the orchardists have to contend is the codling moth. To teach the growers the nature of this pest in all of its stages (the moth, the egg, the worm, the pupa) and how to ascertain the proper times for spraying, the County Agriculturist is rearing moths in 9 cages located in different parts of the county. The records of these cages give very accurately the dates upon which the spraying should be done. The growers are spraying far more carefully this season than ever before.

Wherever it seems advisable farm demonstrations along such lines as better tillage methods, more economical feeding of stock, the growing of some crop, or the pruning and spraying of trees, are arranged in various parts of the county as neighborhood lessons. When possible the people are gathered together in groups to consider these demonstrations instead of dealing with the individual.

2. In a state so varied as this the agricultural problems of the different counties vary widely. The county agriculturist soon gains a knowledge of the local problems, the best farm methods and practices, and the viewpoint of the leading farmers. With such knowledge at hand he can render a very important service to his county by carrying such information to the State College and Experiment Station and the State and National Departments of Agriculture. In this way those investigational agencies are made acquainted with the situation without delay. In the brief time that the county men have been operating in this state many local problems have been reported to the State College and specialists have been sent out to investigate and assist the county men in the solution of the same.

3. In nearly every county it will usually be found that most of the serious agricultural problems have been solved very satisfactorily by several of the best farmers. The county man profits by the years of experience of these men. He studies the methods and practices of the leading dairymen, poultrymen, market gardeners, fruit growers, etc., analyzes the cause of their success, and then carries this information from farm to farm. He secures the assistance of these men in conducting farmers' meetings throughout the county, for there is no better way of teaching the scientific truth or method than by calling attention to someone who is successfully practicing it.

## FAIR DATES

Southwest Washington—Centralia-Chehalis, G. R. Walker, Secretary, Aug. 24-29.

Vancouver, B. C.—H. S. Rolston, Secretary, Sept. 3-12.

Vancouver, Wash.—Geo. P. Larsen, Secretary, Sept. 7-12.

Interstate Fair, Spokane, Wash.—Robert H. Cosgrove, Mgr., Sept. 12-20.

Walla Walla, Wash.—Robert H. Johnson, Secretary, Sept. 14-19.

Washington State Fair, North Yakima, Wash.—Sept. 21-27.

Helena, Mont.—A. J. Breitenstein,

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Powerful Smalley Force-Feed Silage Cutters have increased silo profits for hundreds of farmers here in the Northwest. The Smalley does equally good work in cutting corn, alfalfa, clover, hay, straw, peas, oats, etc., etc.

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*No Silo too high for the Smalley*

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Secretary, Sept. 21-27.

Victoria, B. C.—Geo. Sangster Mgr., Sept. 21-27.

Oregon State Fair, Salem, Ore.—Frank Meredith, Secretary, Sept. 28 to Oct. 3.

New Westminster, B. C.—D. E. MacKenzie, Sept. 28-Oct. 3.

Salt Lake City, Utah—Horace S. Ensign, Secretary, Oct. 5-12.

Olympic Peninsula Fair, Port Townsend, Wash.—Arch C. Tweddle, Secretary, Sept. 10-12.

Western Washington, Puyallup—J. P. Nevins, Secretary, Sept. 29-Oct. 4.

#### RULES FOR BORROWING MONEY

Three rules designed to convince farmers that there is no magic about credit are set down in Farmers' Bulletin 593 "How to Use Farm Credit," which the United States Department of Agriculture has just published. Unless the farmer who is thinking of borrowing money fully understands these rules and is willing to be guided by them, the Government's advice to him is: don't. As it is, there are probably almost as many farmers in this country who are suffering from too much as from too little credit.

1. Make sure that the purpose for which the borrowed money is to be used will produce a return greater than needed to pay the debt.

2. The length of time the debt is to run should have a close relation to the productive life of the improvement for which the money is borrowed.

3. Provision should be made in long-time loans for the gradual reduction of the principal.

The first rule is of course the key to the wise upse of credit. Between borrowing money to spend on one's self and borrowing money to buy equipment of some sort with which to make more money there is all the difference between folly and foresight, extravagance and thrift. If the money is borrowed for a wise purpose it will then produce enough to pay back principal and interest and leave a fair margin of profit for the borrower into the bargain. If it is borrowed for a foolish purpose it will produce nothing and consequently there will be nothing with which to repay the loan.

#### COMBINING PERSONAL CREDIT

The exact principal which has made the cooperative credit systems in Europe successful is being applied by a group of farmers and bankers in Montana and Wyoming. The farmers needed dairy cows, but no individual could go east and buy them. The banks had money and wanted to encourage dairying. The farmers organized, pledging the personal credit of each member, up to \$5000, to buy dairy cows, no matter whether each member actually received cows or not. The bank advanced the money, the cows were shipped in and distributed and the dairy industry started on a firm basis. Combining personal credit turned the trick.

#### TRAFFIC LAWS, AVOID TROUBLE.

Revised Edition of the Standard Oil's "Traffic Regulations" Ready for Distribution.

For the convenience of the motorist, the traffic laws applying to motor cars in the chief cities and towns on the Pacific Coast are set forth in condensed form in a neat booklet just issued by the Standard

Oil Company under the title "Traffic Regulations." It is a revised edition of the popular "Traffic Regulations" compiled and distributed by the Oil Company last fall. Since then the changes in state laws and local regulations have come, and to note such changes the booklet has been revised and enlarged. Traffic laws of the principal cities in the Coast states are so nearly uniform that in a majority of cases a general code serves. This has been compiled for the Standard Oil Booklet. However, it is the exceptions that often bring trouble to the touring motorist, and in "Traffic Regulations" special effort has been made to supply motorists with data of this nature. All the matter it contains regarding laws and regulations applying to traffic is a careful compilation from authoritative records. The Standard Oil Company will forward "Traffic Regulations" without charge on application.

#### ROAD TAX QUESTION

Initiative No. 10 of Seven Sister's.

By H. O. Fishback.

As a farmer and tax payer H. O. Fishback expresses his opinion in the Bee-Nugget that the proposed measure No. 10 of what is known as seven sisters should not be supported by the tax paying farmer. He states: It has been demonstrated that convict labor on the roads is expensive labor, and while I believe it is all right to use it under certain conditions and for certain places, I believe the provisions of this measure are entirely too broad. Under the provisions of this bill, there will be no convicts left to operate the jute mill, which has been installed at the state penitentiary at a very great expense, and the products of which act as a regulator of prices for the vast number of sacks which are being used by the farmers of eastern Washington. This I believe would be very unwise.

Would Increase Burden for Farmers.

The farmers of Western Washington and I presume the same applies to eastern Washington, at the present time are paying a road district tax of anywhere from five to ten mills, many of them the latter figure, and in addition are paying the county road and bridge tax of something like four mills to keep up the roads in their own county. Many, and I think the majority, of people living in incorporated cities are willing to pay a state road levy of at least two mills to be used in the improvement and upkeep of the country roads, and when it is taken into consideration that about two-thirds of the valuation of state property is located in incorporated cities, it is easy to determine that for every \$2.00 paid in by the residents of the country on the state road levy the residents and property owners of incorporated cities are paying in the same fund \$4.00 to be applied on the country roads.

With this fact clearly staring us in the face, I cannot understand why any farmer can for one minute feel that he could give any support whatever to Initiative measure No. 10, in other words voting upon himself a tax of 14½ mills and getting almost nothing from the tax from incorporated cities, whereas, by permitting the legislature to use its own discretion and levy a tax of 1½ mills we would get the benefit of a very considerable amount for our roads by paying only a comparatively small

## Run Your Car Economically

Many engine troubles and the resulting delays and repair costs can be avoided by the use of a suitable lubricating oil. True economy lies in the use of a high grade oil which gives perfect lubrication and assists the engine to do its work regularly and efficiently.

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THE STANDARD OIL  
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is the *best auto oil the Standard Oil Company can make*; produced by experts and proved by successful service in thousands of cars of all types. Its perfect lubrication keeps the motor cool—allows it to deliver full power and cuts repair charges to a minimum.



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THAT WELL PLANTED HOME GROUNDS ARE WORTH SEVERAL TIMES THE COST IS A FACT THAT EVERYONE KNOWS. IT IS TO YOUR DISCREDIT AND ABSOLUTE LOSS IF YOU DO NOT MAKE YOUR PLACE ATTRACTIVE, AS ITS VALUE IS THEREBY GREATLY INCREASED.

High grade fruit trees, roses, shrubbery, etc.  
Fine two-year-old rose bushes delivered anywhere, prepaid, at bargain prices. Write for list.

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FRUITS  
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A Fine Stock of Apples, Pears, Peaches, Plums, Prunes, Apricots and Small Fruits.

It is a good year to increase the ornamental planting. Thousands will come to the Pacific Coast seeking homes during the next few years. Do you wish to sell any part of your land, or your home place, or do you wish to encourage settlers who have some degree of taste and refinement? Then adorn your home with some ornamental plants, shrubs and trees. The cost is trifling compared with the actual value which may be derived. Our catalog contains valuable suggestions.

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additional amount ourselves.

Why any farmer will sign a petition for or vote for a measure of this character, I cannot understand. To me it is equivalent to saying to our friends and neighbors living in the incorporated cities: "Yes, we invite you to come to the country and destroy our roads," but when they in turn say, "We accept your invitation, but we want the privilege of helping to pay for the roads we are helping to destroy," we in turn reply, "No! No! we cannot allow you to do that, we insist upon paying the bill ourselves."

If we support this measure, then do

not complain when some of our city neighbors go by in their heavy autos at a rapid rate of speed and tear the road to pieces that we have paid for.

Think of this matter seriously, my fellow farmer, and decide whether at a great expense you want to help initiate a measure which is against your own best interests. Remember that once the measure is written on the statute books by means of the initiative, it can be repealed or amended only in the same way. No measure should be passed by means of the initiative without very careful and serious consideration on the part of each and every citizen.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### International Irrigation Congress

The first International Irrigation Congress to be held outside the United States is occasioning a great deal of interest among irrigationists all over the United States and Canada. This convention will be held in Calgary, Oct. 5 to 9, next, and according to L. Newman, of Montana, a member of the board of governors, it will be a congress of world-wide importance, and will break all previous records.

Canadians are fully alive to the importance of the congress, and are planning to royally entertain the visitors and delegates while they are in Canada, as well as to provide for them a program of real educational value. The program committee is making preparation for the attendance of all the best authorities on irrigation from the United States and Canada, while delegates will be present from all foreign countries where irrigation is well developed.

One of the principal speakers expected at this meeting will be Hon. A. A. Jones, assistant secretary of the Interior of the United States. His word on irrigation problems is above controversy, as he has been largely instrumental in the satisfactory adjustment of many of the serious problems affecting the prosperity and welfare of the pioneer irrigationists in his country.

One section of the program will be devoted to community upbuilding in the irrigation and rural districts, as it is recognized that farm life should be made more attractive to the young people. This is a subject in which interest will be taken by those attending the congress in Calgary.

More than \$700,000,000 has been spent on reclamation and irrigation work on the North American continent, and over 20,000,000 acres of land have been reclaimed. Many of those responsible for this vast work for the benefit of humanity will meet in convention in Calgary this year Oct. 5 to 9, at the International Irrigation Congress. Much of this money has been spent on irrigation development in Western Canada which delegates and visitors to the congress will be given an opportunity to inspect during their attendance at this first convention in Canada.

#### CREDIT FOR IRRIGATORS.

Financing Particular Farm Enterprises.

By C. W. Thompson.

In certain sections of the country

where farmers have realized the importance of encouraging some particular enterprise, special plans have had to be devised in order to secure the necessary working capital.

The simplest plan is where a group of farmers desiring to take up some line, such as improved dairying, cattle breeding, seed purchasing, etc., agree collectively to adopt a uniform and improved type of enterprise. Thus, in the case of dairying, it may mean a particular breed of heifers or cows to be purchased through expert aid and to be paid for from earnings of the enterprise. Such an agreement may be sufficient to induce a local bank or loan agency to furnish the necessary capital to each of the farmers individually on the strength of their personal notes with added security in the form of an endorsement or a collateral mortgage in the purchase. In some instances where such a plan has been carried out, the money has been secured from 2 to 4 per cent. below the local bank rate.

In sections where the farmers' security when given individually has not been sufficient to attract the necessary capital, other plans have proved to be helpful. According to one of these plans, the farmers organize an association and attach the association's guaranty to the notes of the members. The farmers thus assume collective liability for each other's loans. The additional security thus offered, has enabled them to borrow the capital desired at reduced rates of interest.

Another plan which has worked successfully is where business men of a locality have furnished a limited guaranty for loans of neighboring farmers, for the sake of helping to build up the farm industry of the surrounding territory. With the aid of such guaranty, it has been possible to attract the capital wanted at lower than prevailing rates.

The particular plan that may be most helpful to farmers appears to vary in different regions, depending partly upon the character of the farmers and their methods of farming and partly upon the kind of loan agency accessible. Wherever farmers are confronted with financial problems, it seems important that they should take counsel with each other and with others interested in agricultural improvement and endeavor as far as possible to profit by any experience that has proven of value among those similarly situated elsewhere.

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and Perfection Currant

Attractive prices made now for Advance Orders

Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear. Correspondence solicited.

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The Place to Buy your Supplies

### Bangholm Rutabaga, Bortfelder Turnips

Plant during June or July on any rich moist soil, and you have two of the best producing roots.

Price only 50 cents per pound postpaid. Ask for special prices for large quantities. We sell only direct to farmers.

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**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nelis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

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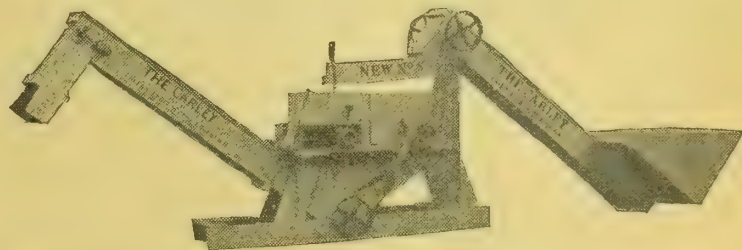
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The best powder for stump blasting purposes. Low freezing. Made on Puget Sound for more than six years and is giving excellent satisfaction to thousands of users. Plain directions with every case. If you can't get VULCAN STUMPING POWDER from your dealer write us. We also sell direct. Please mention this paper.

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## Ground Phosphate Rock

### The Natural Plant Food and Permanent Soil Builder

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station, \$1.96½ gave \$22.11—over 1000%. At Ohio station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

### UNITED STATES PHOSPHATE CO., Salt Lake City, Utah

Write for literature.

"Perfection of fineness in grinding," our motto.



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Nature never did betray  
The heart that loved her; 'tis her  
privilege,  
Through all the years of this, our life,  
to lead  
From joy to joy; for she can so im-  
form  
The mind that is within us, so im-  
press  
With quietness and beauty and so  
feed  
With lofty thoughts, that neither evil  
tongues,  
Rash judgments, nor the sneers of sel-  
fish men,  
Nor greetings where no kindness is,  
nor all  
The dreary intercourse of daily life,  
Shall e'er prevail against us, or dis-  
turb  
Our cheerful faith, that all which we  
behold  
Is full of blessing.

Wordsworth.

### FOOD AND ITS CARE IN THE HOME

By C. F. Langworthy, in Year Book  
U. S. Department.

People used to think that cleanli-  
ness was mainly a matter of personal  
preference. Since the bacteriologists  
have shown that diseases as well as  
decay and loss of material are often  
caused by micro-organisms which are  
commonly harbored in filth and dirt,  
we have come to know that dirt is  
not only disagreeable, but is also  
dangerous, and that cleanliness is  
nowhere more necessary than in all  
that pertains to food.

Perishable food materials are parti-  
cularly likely to spoil if they are ex-  
posed to dust or kept in warm damp  
places which encourage the growth of  
molds and bacteria. One of the popu-  
lar bulletins of the department dis-  
cusses the care of food in the home  
and suggests practical, inexpensive  
ways of keeping it properly. Every  
up-to-date dairyman and the public,  
too, know the importance of absolute  
cleanliness in handling milk. If one  
applies the same reasoning to other  
food materials it is evident that the  
kitchen and pantry need to be taken  
care of as scrupulously as the dairy  
and that the housekeeper ought to be  
as careful in cooking the food she  
serves as must those who handle  
milk. So much has been said about  
the danger of flies as carriers of dis-  
eases that it seems as if everyone  
must realize the importance of keep-  
ing them out of the house, especially  
out of that part of it where food is  
kept or eaten; yet thorough screen-  
ing is still far from usual, even in  
kitchens and dining rooms, and many  
families seem careless of this very  
real danger.

### LADIES AT NURSERYMEN'S CON- VENTION

The ladies attending the Pacific  
Coast Association of Nurseymen at  
Vancouver, B. C., will long remember  
the kindness shown them in the en-  
tertainment given by the British Col-  
umbia nurserymen and their friends.  
The week was a continual round of  
pleasure with auto rides about the

cities of Victoria and Vancouver and  
through parks and nurseries where  
they were treated to beautiful flowers  
and served with delicious fruits and  
the afternoon teas.

A delightful boat ride on Indian  
river to Wigwam Inn, the bouquets,  
the beautiful reception at Glencove  
Inn with an address of welcome by  
Mrs. Baxter, the mayor's wife, were  
all greatly enjoyed. Nothing was  
left undone that would add to the  
pleasure or comfort of the guests and  
many expressions of appreciation  
were heard. While this and the past  
conventions have been so greatly en-  
joyed, the ladies join with Mrs. Har-  
ness, member of reception committee  
in the suggestion not to make the  
entertainment feature too elaborate,  
to have it become extravagant. The  
good nurserymen want to do so  
much for the pleasure of the ladies.  
Remember, she states we are "co-  
workers" and not "hangers on." The  
inspiration and knowledge obtained  
at these meetings we should put  
into form to serve as guide and help  
in the adornment of the thousands  
of homes now in the making on the  
Pacific Coast. To help broaden the  
usefulness of the nursery business  
is an added pleasure to that of being  
so delightfully entertained.

### FIRST FARMERS' CO-OPERATIVE LAUNDRY.

The department of Agriculture calls  
attention to the fact that the first  
farmers' co-operative laundry in the  
United States is now in successful  
operation at Chatfield, Minn., where  
it is doing much to eliminate for  
overworked farm woman the terrors  
of "blue Monday." Chatfield is only  
a small village and the laundry's  
patrons are almost entirely obtained  
from the open country around. Coarse  
clothing of all sorts, overalls, rugs,  
bed clothing, and fine fabrics as well  
are handled at a uniform price of 5  
cents a pound for washing and iron-  
ing. An extra charge is made for  
such articles as need to be ironed  
by hand. The laundry is managed in  
connection with a co-operative cream-  
ery, paying to the creamery a reason-  
able rental for the use of a part of  
its building. Modern machinery was  
installed at the beginning and an ex-  
perienced launderman engaged as su-  
perintendent. For the first year of op-  
eration, which has just closed, the re-  
ceipts were \$5,403, 70 per cent. of  
which was paid out for wages. Pat-  
rons received a dividend of 10 per  
cent. and stockholders 6 per cent.  
additional. The success of the inno-  
vation will, it is said, prove most  
encouraging to rural workers every-  
where.

### CONTROL OF MOSQUITOS AND REMEDIES FOR BITES

Mosquito trouble may be great-  
ly lessened by removing all  
small water holding vessels from  
the premises, screening the larger  
receptacles, draining all pools that  
can be drained, pouring a little low-  
grade kerosene on those that cannot  
be drained, and planting young fish  
in the steams. These plans are re-  
commended by A. L. Lovett, of the



## Keep It on the Table

A tasty addition to every meal; handy and healthy for the children's lunches;  
an economy food.

### ROGERS' NUT BUTTER

If your grocer hasn't it, write us, giving his name and full address, and receive  
FREE a SAMPLE JAR with BOOK OF RECIPES for dishes made with  
Nut Butter. Mention this paper. The ROGERS CO., Tacoma, Wash.



## Olympic WHEAT HEARTS

The little hearts of Wheat. A tempting breakfast  
dish, easily cooked. 4 pound cartons.  
Sold by all Grocers.

The Puget Sound Flouring Mills Co. Tacoma, Wash.

## Kerosene the clean, cheap, fuel

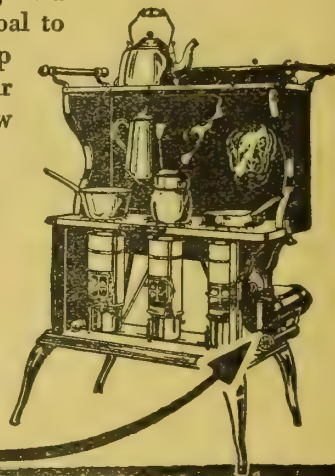
Do you realize the convenience and economy of the  
modern oil stove? The fuel—kerosene—is the  
cheapest you can get—clean, safe, easy to handle. The  
stove has been perfected until it is as good as a wood  
or coal range for any kind of cooking. The

## New Perfection OIL COOK STOVE

will cook a quick, light breakfast for you, or it will  
cook a big dinner with roast and bread and pastry.  
The New Perfection doesn't overheat the kitchen.  
It doesn't smoke or taint the food. Think of the  
comfort of summer cooking in a  
cool kitchen. No wood or coal to  
lug; no ashes to dirty up  
the house. Why not ask your  
dealer to show you the New  
Perfection.

Standard Oil  
Company  
(California)

FOR  
BEST RESULTS  
USE PEARL OIL



## NORTHWEST GROCERY CO.

TACOMA, WASH.

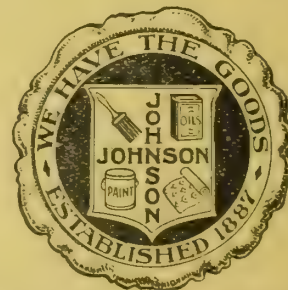
Conditions seem to indicate  
that everyone wishes to econo-  
mize and everybody should have  
our catalogue whether they buy  
from us or not. A postal with  
your name and address will  
bring it.

### Northwest Grocery Co.

13th and Commerce Sts.  
Tacoma, Wash.

Oldest and Largest Mail Or-  
der House in the State.

## A. S. Johnson & Co.



1142 C Street

Tacoma, Wash.

Keep a Bottle  
in Your Pantry  
of this Delicious  
Flavoring—

### Mapleine

Use it as a change from the  
everyday Lemon and Van-  
illa in flavoring your Des-  
serts, Puddings, Frostings,  
Ices, etc.; and especially  
for flavoring white Sugar  
Syrup. Ask your grocer.

Crescent Manufacturing Company, Seattle, Wash.





the face or suspending it above the pillow. A good combined repellent is made of essential oil of orange, 30 grains camphorated alcohol, 30 grains, oil of cedar, 15 grains or of equal parts of castor oil, oil of lavender and alcohol.

Inside smudges are produced by burning either camphor or pyrethrum powder. Burning a ball of camphor the size of a hen's egg over a small lamp makes an effective smudge. Pyrethrum is first made into a ball by moistening it in water and moulding into cones as large as chocolate drops, and then placed in shallow dishes and burned by lighting at the apex. One cone gives smoke enough for the average size room.

Remedies for bites are as follows: Rub moistened toilet soap over the wounds; or apply either ammonia or alcohol to the punctures.

#### HEALTH AFFECTED BY CANNING

**Housewives Will Find Canned Vegetables and Fruits Healthful and Economical for Winter Use, says U. S. Dept. of Agriculture.**

The balanced ration of many Americans to-day is made up something as follows:

Bread, butter, eggs, meat and fish, potatoes.

#### Patent Medicine Laxatives

Many Americans customarily suffer from one of the following complaints: Indigestion, constipation, rheumatism. A simple change of the daily menu might go a long way to remedy these ailments, according to the Bureau of Plant Industry's specialist in charge of Canning Club Work. He recommends a change to a menu more in keeping with nature's plan something as follows:

Bread, butter, fruit, vegetables, greens, meat, fish, eggs.

He recommends that every family provide a diet of fruit and vegetables for every day in the year. This would do much to eliminate the need for patent medicine laxatives that figure so prominently in many Americans bill of fare. It every home kept on hand enough canned products so that there might be a can of fruits, a can of greens and a can of vegetables for every day during the winter, there would be little need for the laxatives now so regularly purchased from the corner drugstore. There would also be great economy in the substitution of an inexpensive food for more expensive ones.

More home canning, done at the proper season, would enable the average family always to have the proper quantity of canned products, and would save an astonishing amount of food that goes to waste every year. It is estimated that over 50 per cent. of all the vegetables, greens, fruit and berries that grow in this country, go to waste and are actually lost to those who need them. This is simply because housewives have not learned to care for these surplus products efficiently and to make them available for the winter months by canning.

#### TYPHOID FEVER PREVENTIVE.

Typhoid fever is caused by the growth of microscopic plants (bacteria) in the small intestine of man. They gain entrance to body through the mouth; that is, in food and water chiefly the latter. They leave the body in the feces and urine and from

these into water or are carried by flies to food in infect others.

One of the unfortunate things in regard to the trouble is the fact that a person may have the disease in a mild form and still communicate it to others who will have it in a most virulent form. Again a person often-times apparently recovers from the disease and still carries the microbes in his body, passing them out from time to time to infect his neighbors. Such a person is known as a "typhoid carrier." Such a carrier invariably bears large numbers of the bacteria upon his person, especially upon his hands. The common habit of harvesters of wiping the mouth of the jug with the hand before drinking thus furnishes a most effective means of spreading the disease.

Those in charge of harvest camps should see to it that food is effectively screened from flies, that waste is disposed of in a sanitary manner and especially that wholesome water is provided and distributed in such a manner as not to distribute disease. A few dollars expended in fly screens, individual drinking cups and individual towels will result in great saving in health and life.

In case of an outbreak of the disease in any community or camp, those exposed should at once be vaccinated. Those suffering from the disease should be isolated and their excreta thoroughly disinfected.

IRA D. CARDIFF,

Director Experiment Station,  
Pullman, Washington.

#### HOME GARDEN AND CANNING SCHOOLS.

The Educational Department of Illinois Federation of Women's Clubs has been most fortunate in securing Prof. O. H. Benson, of U. S. Department of Agriculture, as instructor in their Home Garden and Canning Schools, to be held at De Kalb Normal in July.

Mr. Benson believes that the boy or girl who has learned to do one thing well is practically safe for all time and can be led on to other and greater achievements.

Of surpassing interest to housekeepers will be the demonstrations of the cold pack method of home canning of all kinds of fruits, vegetables, greens, sweet corn (on and off the cob) fish meats, meat juices, etc., using home-made canning outfits and four distinct types of commercial outfits, all of which are portable and available for use in the back yard.

No. "canning compounds" are used. It is a lamentable fact that many women are using dangerous, illegal chemical preservatives in their home-made canned goods.

Dr. Harvey W. Wiley, in August 1913, "Good Housekeeping" takes a shot at dangerous canning compounds and has this to say of a sample of a popular brand sent him by some housekeeper: "This compound consists principally of borax with benzoic acid and salt. The chemical preservatives first named, are deleterious to health and should never be used in a food product. No chemical compound is necessary in canning. The selection of good materials and complete sterilization with careful sealing are all that is necessary.

This is exactly what Mr. Benson teaches by so simple a method that a child can learn it. The form, color, and texture of fruits and vegetables are preserved. By placing them in



## DE KOVEN

### A SCHOOL FOR BOYS

Ideally located on picturesque Steilacoom lake. A homelike and healthful school.  
**TRAINS FOR LEADERSHIP**  
To give each boy individual attention, only a limited number admitted. Upper school prepares for Colleges and Technical Schools. Lower school for younger boys. Our 23rd school year opens Sept. 17. Write now for our illustrated catalog.  
D. S. PULFORD, A. M., J. R. EDEN, A. B., Principals  
P. O. Address: South Tacoma, Wash.

## FOR POWER-



## RED CROWN

### THE GASOLINE OF QUALITY

There is gasoline and gasoline. As a discriminating purchaser you are not concerned with what your gasoline costs *per gallon*—but you are very much concerned with what it costs *per mile*. It is this consideration that will lead you, like thousands of other motorists, to use Red Crown. It is quick acting—uniform—reliable. There is power in every drop.

Red Crown signs are furnished to all dealers handling Red Crown Gasoline. Watch for the Sign or ask our nearest agency about delivery in bulk.

**Standard Oil Company**  
(California)

THE

### ANNIE WRIGHT SEMINARY

TACOMA, WASHINGTON  
Thirty-first Year

An endowed Church School for Girls, College Preparatory and General Courses. Certificate admits to Smith, Wellesley, Vassar and the leading State Universities. Special advantages in Domestic Science, Music and Art.

**ADELAIDE PRESTON**  
Principal

the cans in a fresh state, volatile oils are retained and the fresh, dainty flavor is not lost.

Beans need not be left on the vines to become tough, nor carrots and beets to become fibrous and woody—they may be canned when they are



## SODA CRACKERS

Packed in tins will keep crisp—  
**TRY THEM**

sweet, tender, and juicy, and saved for the winter table. Windfall apples, thousands of bushels of which are wasted every year in our state, may



be preserved so that they will be fully as delectable as though they came from the corner fruit stand at 5c apiece.

It is estimated that 1,500 cans of tomatoes were put up last year by members of the Girls' Garden and Canning clubs. The average cost to the club members of producing and putting up a No. 2 can of tomatoes was a trifle less than 4 cents. The average girl with one of the modern, labor-saving devices in home canning can put up almost 300 cans a day.

Last year, six girls paid their way for an entire term of the Mississippi Normal College from one season's profits.

Scores of girls are reaching the Short Courses at the State Agricultural Colleges by this route.

The value of such practical vocational training to the youth of our land can never be estimated in dollars and cents. It means teaching our children to do a splendid piece of the world's work—the effectual elimination of waste. There is an aesthetic, as well as a practical and educational value, not to be overlooked. The garden movement will surely cultivate that inborn love of the beautiful in tree and bud and flower—stunted in all too many of us.

PROF. FRED RANKIN,  
University of Illinois

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

## Municipal Control of the City Milk Supply

A Plan for Improved Methods of Milk Supply has been Submitted to the Mayor and City Council of the City of Seattle, by B. F. Shields, of the Spokane Grain Company.

deserves serious consideration and thought from all.

### Proposed Solution.

For the City of Seattle to take over the distribution of milk within the City of Seattle. I would suggest that the City build a central plant, equipped with the most modern machinery for filterizing, sterilizing and pasteurizing. All to be carried on under the observation of the most skilled men possible to obtain; no milk to be sold unless bottled.

I would suggest that all milk used by the City should pass through this "City Central Plant" and from there distributed in a systematic way so that there would be no duplication or lost motion.

I would suggest that the distributors be dressed in white uniform and thus make everything as attractive and sanitary as possible.

I would also suggest having the city maintain its own Veterinary Service whose duty it would be to make tuberculin tests of all cows furnishing milk to said City Central Plant; make rigid rules for the sanitary condition of said herds furnishing milk and if there were any who refused to comply with these rules and regulations, they would promptly be notified that they would not be permitted to sell their milk to the City. This Veterinary Service should of course be furnished free to all herdsmen in order to make it efficient. If this method were pursued it would insure as pure milk, in its raw state, as could be possibly procured. Then, by filtering, pasteurizing and sterilizing, we would be in a position to furnish to our citizens milk as free from filth and deadly germs as could possibly be done.

The average price paid to the producer of milk is not to exceed 16c per gallon; and the average price charged the consumer is not under 39c per gallon, leaving 23c for distribution, yet the distribution, as it is now carried on, leaves little or no profit to the distributor. There is too much duplication; too much loss in bottles and bad accounts.

It is my candid opinion that if the City would take over the distribution

For the past two years I have given considerable time and thought to the milk problem of this city. Under present conditions of production and distribution, it is out of the question to give to the people pure milk regardless of the price charged therefore.

At the present time the farmers are not getting a price for their milk that will justify them in giving better service than they are now doing. Furthermore, the price paid by the consumer for milk is not in keeping with the price received by the producer.

Notwithstanding this fact the distributor claims he is not making more than expenses. Therefore, under present conditions the consumer is compelled to use milk contaminated with tuberculosis and other germs fatal to the health and life of our citizens.

Up to the present time no one has come forward with any feasible plan to change present conditions.

Our City has expended two hundred thousands or more dollars in the building of a pulmonary hospital for the cure of tuberculosis, but has expended nothing whatever to prevent its deadly germs from being consumed by our children in their daily supply of milk.

After careful thought and consideration of this question, which to me seems a most important one, I believe I have arrived at a practical solution of the problem; one in which the producer can be paid more for his product than he is now receiving at the same time furnish milk to the consumer for less than he is now paying, yet leave a margin of profit so great that it is really difficult to comprehend; at the same time furnish to the consumer milk which will be as free from tuberculosis as is possible. If this condition of affairs can be brought about, it certainly

## A. J. C. C. JERSEYS

Big Producers

For Sale—A fine bull calf, sired by Gertie's Stoke Pogis 33rd, out of Dixie Bertha, a sister of Morrow's Select, which made 826 pounds butter in one year. A bargain at my price, considering quality. Have both Island and American bred. Ancestral records of the very best. Particulars on application.

J. B. EARLY

Grandview, Wash. (Yakima County)

## Turner & Pease Co., Inc.

813-815-817 Western Ave., Seattle

Leading Manufacturers of Butter in the State

We pay cash for butter fat and eggs at correct market prices.

## Registered Guernseys For Sale

During the past month we have supplied several dairymen with choice pure-bred Guernsey sires. We have yet some fine young bulls of noted breeding to offer which we believe will prove to be valuable for dairymen seeking to increase the revenue of cream and butter from their herds.

Write us for particulars and prices.

Reasonable terms to responsible parties.

Augustine & Kyer

115 First Street  
Seattle, Wash.

## Meadow Brook Farm

Breeders of  
Pure Bred  
Ayrshire  
Cattle

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

A. P. Stockwell, Aberdeen, Wash.

## Registered HOLSTEIN CATTLE

Our last shipment of noted pure breeds and very choice high grade cows came through in fine shape, and a part of the lot has gone to pleased customers on both sides of the Cascades. We are offering fresh and coming fresh cows that cannot fail to please buyers. Our young stock heifers and pure-bred bulls are developing in fine shape ready for the increased demand sure to prevail in the near future.

Please mention this paper.

H. S. ROYCE

Savage-Scofield Bldg., A St.  
TACOMA, WASH.

Please mention this paper

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS

NORTH YAKIMA, WASH.

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DUDOC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.



of milk and charge the consumer the same as he is now paying and pay the producer the same as he is now getting, the profit to the City would be ample to pay the entire cost of the Police and Fire Departments annually; this sounds unreasonable but it can be verified.

I would suggest that the City charge just what it costs for distribution and maintenance of the City Central Plant—which should not be more than 2c per quart or 8c per gallon. In that way, the price to the consumer would depend on the price paid to the producer. As conditions now exist, the consumer does not participate in the reduced price paid the producer; in most cases the consumer is paying winter prices.

My estimate of the cost of a City Central Plant such as I have in mind would be complete including distribution outfit about \$250,000. At 2c per quart I estimate the daily receipts would be about \$2000; in fact, I am of the opinion that it would not cost to exceed \$1500 per day and probably not more than \$1000, for operation figuring on a sale of 100,000 quarts per day—which I believe is about right. I am confident at 2c the annual profit would pay for the entire cost of the plant with all expenses.

You will doubtless look on this as something rather out of the usual; this I will admit; it is new—right off the bat—but after careful thought and consideration I am thoroughly convinced that it is feasible and practicable; by its operation no one is injured; everyone is benefited; life and health is protected from tuberculosis germs which is far more serious than the public seem to think. It is my candid opinion—and I know whereof I speak—that between ten to forty per cent. of all the cows supplying milk to this city have tuberculosis. It seems to me that this is a subject that calls for serious consideration.

I would be pleased to submit further information on this subject if you see fit to honor it with your consideration.

Respectfully submitted,  
B. F. SHIELDS.  
945—12—N., Seattle.

#### VALUE OF DAIRY COWS

There has been much discussion concerning the value of purebred cows in relation to their official records. Mr. D. Brooks Hogan expresses a desire in the Rural Spirit, to have the opinion of leading dairymen on this subject and we will be glad to give space in the news columns of the Northwest Horticulturist and Dairymen for such estimates. Mr. Hogan starts the discussion with the following values for mature cows having made the records here suggested:

|                              |        |
|------------------------------|--------|
| 300 lbs. butter—cow worth..  | \$ 150 |
| 400 lbs. butter—cow worth..  | 350    |
| 500 lbs. butter—cow worth..  | 500    |
| 700 lbs. butter—cow worth..  | 725    |
| 600 lbs. butter—cow worth..  | 600    |
| 800 lbs. butter—cow worth..  | 900    |
| 900 lbs. butter—cow worth..  | 1200   |
| 1000 lbs. butter—cow worth.. | 1600   |

The 300-pound cow just pays for her keep; nearly all over that adds profit. Are these prices too low?

#### HUNDRED POUND COWS

The hundred pound milk per day cows, are attracting the attention of the Holstein breeders and the herd

which contains most of them, with some degree of indurance, is the great magnet for attraction and publicity.

The Provincial Colony Farm, connected with the Hospital for the feeble minded at Essendale, B. C. stands high, in this respect having the following list of 10 cows whose milk records per day, according to the report of G. S. MacGowan, are as follows:

|                                                                                                                   | Lbs   |
|-------------------------------------------------------------------------------------------------------------------|-------|
| "Bessie Botsford" .....                                                                                           | 100.1 |
| "Madam Pasch Pauline" .....                                                                                       | 118.8 |
| "Grebeegga 2nd" .....                                                                                             | 103.4 |
| "Duchess Boutsje Dekol" .....                                                                                     | 113.6 |
| "Minnie Rooker's Poem" .....                                                                                      | 100.4 |
| "Netherland Segis 2nd" .....                                                                                      | 103.4 |
| "Princess Hengervelt" .....                                                                                       | 104.6 |
| "Birdie 2nd's Netherland" .....                                                                                   | 102.8 |
| "Acme Sadie Pauline" .....                                                                                        | 101.2 |
| "Zarilda Clothilde 3rd Dekol" ....                                                                                | 123.9 |
| "Bessie Botsford" gave 133.7 lbs. butter in 30 days and "Madam Pasch Pauline" gave 136.34 lbs. butter in 30 days. |       |

#### BREEDING UP.

Mr. F. M. Svinth, Chehalis, Wash., is demonstrating from practical experience that it pays to breed up. The young cows raised on his farm, sired by a bull with good authenticated records, is giving a larger flow of milk and more butter than their dams. Aiming for a herd of 100-pound milk per day cows, Mr. Svinth is buying sires which he believes will, in the course of a few years enable him to make such record. Some time ago he bought of Hollywood Farm the fine young Holstein bull, Hollywood Rodelia Palmyra, a grandson of King Segis and of Grace Fayne 2d's Homestead. The bull has a long body, straight back, good head and is well marked. Mr. Svinth has a good dairy of grade Holsteins and seven head of pure bred females. He won prizes at the last Southwest Washington Fair and will win more this fall. He recently put up a good sized silo and filled it with alsike clover, which will serve to keep up the milk flow during July and August when the pastures are rather short on account of dry weather. The silo will be ready for a corn crop in October. Mr. Svinth realizes that "breeding up" successfully and profitably requires feeding up, for which an abundance of cheaply produced feed is necessary.

#### AYRSHIRE CATTLE IN DEMAND.

Dairymen of the Pacific Northwest are becoming thoroughly convinced that it pays to raise cows which will give a larger milk flow and butter yield than the common or average stock, and they are buying pure-bred sires from breeders whose herd records are well in the lead.

Mr. J. W. Clise, proprietor of Willowmoor Farm, reports the sale of Willowmoor Peter Pan 18th to Henry Shagren, Lynden, Wash. The dam of this sire is imported and his sire also imported by Mr. Clise, is grand champion of both countries. One of Peter Pan's daughters holds the world's record for production as a two-year-old.

According to the Rural Spirit Willowmoor Farms have shipped the young bull, Willowmoor Sentinel 5th, to George G. Carl, of Glenada, Ore. This is a very fine young bull of typical Ayrshire conformation, out of an imported cow and sired by Willowmoor Sentinel, whose dam, Dora, has



## DE LAVAL CREAM SEPARATORS save much time and labor in summer

BESIDES GREATLY INCREASING the quantity and improving the quality of cream and butter De Laval Cream Separators save much valuable time and labor.

THIS GREAT SAVING OF time and labor counts for more in summer than at any other season and often alone saves the cost of a separator, aside from all its other advantages.

AS COMPARED WITH ANY kind of gravity setting the saving of man's time and labor and usually woman's drudgery with a De Laval is a big item in its favor.

AS COMPARED WITH other Separators the De Laval saves much time and labor by its greater capacity, easier running, easier handling, easier cleaning and freedom from need of adjustment or repair.

THESE ARE MERELY SOME of the advantages which make a De Laval Cream Separator the best of all summer farm investments, as every De Laval agent will be glad to explain and demonstrate to any one at all interested.

SEE THE NEAREST De Laval agent at ONCE or if you do not know him write us direct for any desired information.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM ST.  
SAN FRANCISCO

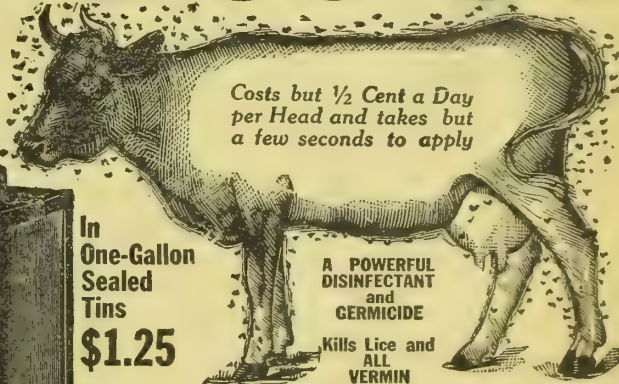
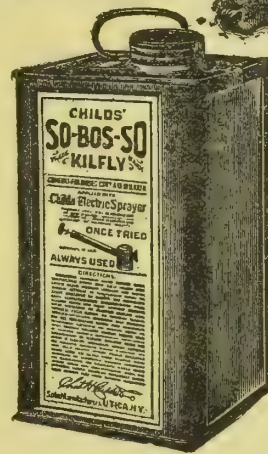
1016 WESTERN AVE.  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

# So-Bos-So

The Most  
Successful

FLY  
KILLER



Costs but ½ Cent a Day  
per Head and takes but  
a few seconds to apply

In  
One-Gallon  
Sealed  
Tins  
\$1.25

A POWERFUL  
DISINFECTANT  
and  
GERMICIDE  
Kills Lice and  
ALL  
VERMIN

Your cows will give ½ more milk—your horses will do more work on less feed when protected from the torture of flies. A single trial will convince you.

Write today. Ask for Catalog No. 56  
and the So-Bos-So Booklet.

Portland Seed Co.  
Portland, Oregon  
Western Agents Childs' So-Bos-So



## CASH FOR CREAM

Highest market price. Guaranteed test. Prompt cash payment for each shipment. We are also in the market for eggs.

MILLER BROS. CO.  
1532 Commerce St., Tacoma, Wash.

## BULLS FOR SALE from A. R. O. COWS

Home of K. P. Sanesta Topsy, only daughter of King of Pontiacs on the Pacific Coast, Ophelia Sanesta Pauline official record of 29.46 lbs. butter 7 days and 20 others.

WRITE FOR PRICE AND PARTICULARS  
CALVIN PHILIPS, Pres. GUY M. RICHARDS, Gen. Mgr.  
Greenbank Farm, Greenbank, Island County, Wash.



an official record of over 21,000 pounds of milk in a year. Such bulls will have a marked effect upon the dairy cattle of their locality. This fine animal will, without doubt, leave his impress, and stamp his own and his ancestors' remarkable characteristics on the dairy herds about Glenada.

#### YELLOW MILK AND BUTTER

Kind of Feed Influential, Aside from Breed.

That the rich yellow color demanded by the public in dairy products is primarily due to the character of the cow's feed is demonstrated by recent experiments carried on by the U. S. Department of Agriculture in cooperation with the Missouri State Experiment Station. For some years dairy experts have been studying this question. Their conclusion is that, although to some extent a breed characteristic, the intensity of this yellow color may, within certain limits, be increased or diminished at will by changing the animal's rations.

Chemical tests show that the yellow pigment in milk consists of several well-known pigments found in green plants. Of these the principal one is carotin, so called because it constitutes a large part of the coloring matter of carrots. The other yellow pigments in the milk are known as xanthophylls. These are found in a number of plants including grass but are especially abundant in yellow autumn leaves.

These pigments pass directly from the feed into the milk. This explains the well-known fact that fresh green grass and carrots increase the yellowness of butter, the only standard by which the average person judges its richness. On the other hand, a large proportion of these pigments is deposited in the body fat and elsewhere in the cow. When the ration is changed to one containing fewer carotin and xanthophyll constituents, this hoarded store is gradually drawn upon and in consequence the yellowness of the milk does not diminish so rapidly as it otherwise would. This yellowness increases, however, the instant the necessary plant pigments are restored to the ration.

Green grass is probably richer in carotin than any other dairy feed. Cows fed on it will therefore produce the highest colored butter. Green corn, in which xanthophylls constitute the chief pigment, will also produce a highly colored product. On the other hand a ration of bleached clover hay and yellow corn is practically devoid of yellow pigments and the milk from cows fed upon it will gradually lose its color. It is, of course, indisputably true that the breed does influence the color of the milk fat; but vary the ration and there will be a corresponding variation in the color of the milk fat in each breed.

#### HOLSTEINS, FROM JANSSEN

Mr. Thomle, of Stanwood, recently took over 24 Holstein cows high grade and a pure-bred bull from J. F. Janssen, of Seattle.

The sire is a descendent of Cornucopia Pauline—34½ lbs. butter fat in seven days and the whole herd have excellent milk and butter fat records. Mr. Thomle is in line for some high record producers and as a leader in his cooperative dairy district will keep close to the pure bred line with no uncertainty about the

producing capacity of the cows.

Mr. Janssen shipped a carload to Hawkins & Morton, Albany, Oregon, including 19 grade Holsteins, 1 pure bred heifer and the registered sire Pietertje Aggie Yuel. There is a constant demand for young cows, heifers, and cows coming fresh and for sires with authenticated records. A large number of individual selections were made last month.

#### STATE COLLEGE HOLSTEIN COW

Angel, Holstein, Gives 94 Pounds of Milk Daily.

Angel, a purebred Holstein cow, owned by the State College, Pullman Washington, has established a new record for milk production on the college farm. Angel, during one month, has produced an average of 94 pounds of milk per day, and to give her relief she is milked four times daily. The record cow consumes nearly twice as much food each day as the average animal on the farm, and is valued at \$800. The test is being conducted by Professor A. B. Nystrom head of the dairy department, and will be continued for a year.

#### JERSEY ECONOMICAL PRODUCER

The registered Jersey cow, Louise of Shadylawn Farm, at state College, Pullman, Wash., weighing 750 to 775 pounds produced 919.7 pounds milk during the month of April, with an average test of 4.7 per cent. fat. During May her milk yield was 1132.7 pounds. The feed was mostly pasture, her grain ration being as low as 3 pounds daily.

This cow produced the second month almost one and one half times her own weight of milk and figuring the milk to contain 13 per cent. total solids this would amount to 143 pounds of dry matter or approximately one fifth of her own weight. This is all digestible matter and shows how the dairy cow is the most economical producer of human food of any of our farm animals.

R. E. HUNDERMARK.

#### ENGLISH FRUIT CROP LIGHT

According to information received by the Northwestern Fruit Exchange the fruit crop in England, particularly the apple, is below normal.

The season of 1914 will go on record as one of the most unfortunate ever experienced by fruit growers of England, according to this source of information.

#### SOUR MILK FOR CALVES

Sour milk fed in summer to calves is all right and does not lead to scours when kept clean, soured quickly and fed without delay according to experiments by the U. S. Department of Agriculture. It is not necessary to go to any expense to keep the milk sweet for calves, but the sour milk is not relished so well at a low temperature.

#### SCRUB SIRES UNPROFITABLE

The scrub sire has done inestimable damage to the quality of Washington livestock. He is a curse to his owner, who is cursed by his neighbors. The pure bred sire that is backed by parents and grandparents of high merit will add quality to the offspring of your herd, is the opinion expressed by the State College, Pullman, Washington in the College News Letter. It is evident that the leading dairymen



"Don't Sit on the Cow's Tail"

The CHAS. H. LILLY COMPANY, Seattle

Flies Can't Stand It  
but it doesn't hurt the milk—use

**LILLY'S FLY KILLER**

freely on your stock—it'll save you money which means making money.

All Dealers 35c quart,  
\$1.00 gallon, \$3.50 for 5 gallons.

## Live Stock Market

Send for our quotations on cattle, hogs, sheep, poultry and hides. We buy stock cattle.

Try the parcel post service for our meats; anything in the packed line.

Occasionally we have some good dairy cows. Write, giving particulars.

## Tacoma Meat Company

1508 Pacific Ave.

TACOMA, WASH.



We offer practically purebred cattle of the noted Hengerveld breeding, close up to the 10,000-pound-per-year capacity of milk, but unregistered; therefore we can deliver them at lower prices than is required for the registered Holsteins. For milk and butter fat production some of these cows are unsurpassed and we supply single animals or in ordinary herd lots.

We also have some noted purebred cows and sires. Please let us know the number and the kind of cows you have in view to obtain in the near future.

**JOHN F. JANSSEN,**  
"The Quality Buyer"

523 BAILEY BLDG.

SEATTLE, WASH.

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.

J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington

## H O L S T E I N H O M E

Home of Maldeta Canary Mercedes, grand champion at Washington State Fair 1913, and the record price cow (\$1800) west of the Rockies. If you want a bull of the producing and show kind to head your herd let me tell you about some of my young ones.

E. B. MARKS, Proprietor

North Yakima, Washington

## H A M P S H I R E S W I N E "THE HOG WITHOUT A HOLLOW"

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.

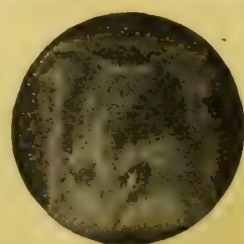


A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.

THE E. N. PEASLEE CO.,  
Clarkston, Wash.

#### Oregon Collie Kennels



Established 42 years. Choice Puppies (either sex) Breeding Pairs Bitches in whelp and stud dogs for sale. Send 2c stamp for illustrated catalog.

O. D. WAIRN  
Shadeland  
Farms  
E. F. D. S.  
Amity, Oregon



of the Northwest including those of Oregon, Idaho and Washington, are in line for better sires for their dairy herds. Better herds, right feeding, proper management and sanitary products are the things sought by those who are realizing a satisfactory margin of profit. They will not waste time with sires of uncertain breeding.

#### HOLSTEIN SALE

The Holstein sale at the Union Stock Yards of the Carmichael herd and other consignments was very successful. Arthur Edwards, Turner, Oregon, paid the top price \$425 for a pure bred cow. P. A. Frakes, Scappoose, Oregon, paid \$275 for a 3-year registered cow, and 335 for another. Chas. Barnard, Beaverton, Oregon, bought several at \$300 to \$325 each. E. B. Marks, North Yakima, paid \$275 for a registered 2 year old heifer. The 27 females sold for an average of \$289.44 and the 6 bulls brought an average of \$139.17 each.

#### PARKER'S PRACTICAL DAIRY FARM

About four miles from Mt. Vernon is located the valuable dairy farm of Mr. Jasper Parker, who is a practical example of successful dairying in this part of the state. He has 185 acres of land all in cultivation, with three large barns, besides a milking barn, which is 38x154 feet, with capacity for 100 cows. His herd consists of 30 registered and 94 grade Holsteins. Mr. Parker has been careful for years past to use only pure bred sires, backed by records of high merit, and in every generation he has obtained improved milking records of his cows. The feed is raised on the place. This year about 350 tons of ensilage is produced, also clover, mixed hay, oats, barley, and mangels. The milk has been sold to the condensor for nearly eight years for an average price of about \$1.60 per hundred pounds.

Testing for individual merit of each cow has been carried on for about four years, and through an association one year. On July 15 two cows of this herd will be entered for official test. The health of the entire herd is good, all being tuberculin tested when over one year of age.

Here are correct methods in practice for successful dairying — good cows, with a constant aim to improve each generation, gradually developing an entire herd of pure-breds. There is an aim to feed all that the farm produces in grain and grasses and to grow all the feed required for the dairy herd.

#### GUERNSEY MILESTONES

The making of World's records and the attention they attract to the breed that holds the pennant is of undoubted advantage. There are many, however, from other states than Missouri who wish more extended information. Was the cow "a freak" or is she the result of careful mating and breeding of high producing ancestors? Can we so select and combine blood line or producing dams with proved sires as to give assurance regarding the progeny, and the yield they will give? Can the breeder determine what breed to select for his special market? Others wish to know not the phenomenal record made by some animal with extraor-



#### Insures Full Milk Pail

Cows give more milk and make milking safer and easier when not bothered and bitten by flies. Relieve

their distress by spraying them with

#### Conkey's Fly Knockers

Gives cattle the peace and comfort that insures more milk, greater weight and productiveness. Does not harm skin nor coat.

#### Keeps Flies Away From Cattle and Horses

One ounce sprays two animals.

TRY IT 15 DAYS, Money Back if Not Satisfied Try a can today. Gallon \$1.00, 5 Gallon \$4.00. Sold by most dealers.

Inland prices: Gallon \$1.25; 5 Gallon \$5.50.

The G. E. Conkey Company Cleveland, Ohio

Coast Distributors Seattle Seed Company, Seattle Inland Seed Company, Spokane Routledge Seed & Floral Company, Portland



#### Conkey's Fly Knockers

Is Sold by

POOLE'S SEED & IMPLEMENT CO. 1507 Pacific Ave., Tacoma, Wash. Write or call for it

#### HOLSTEIN BULL FOR SALE

Chimacum Aaggie Cornucopia No. 64100, H. F. H. B., bred by M. S. Nye, Preble, New York. Calved August 15th, 1909. His grandam Aaggie Cornucopia Pauline is a 34-lb. cow. Sired by Aaggie Cornucopia Johanna Lad Junior No. 36, 974 H. F. H. B. Dam Onda Dorothy Concordia Paul No. 67853 H. F. H. B. A splendid animal, his youngsters are making excellent records.

A few choice cows for sale. Write for prices or call.

F. I. MEAD 524 California Bldg. Tacoma

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

S. M. SHIPLEY, Proprietor, Haller Bldg., Seattle.

dinary care and feed. They ask what may be expected from a herd of ten or more such as I can buy? What is the average production of the Guernsey cow in milk and butter fat?

To obtain these figures with any degree of accuracy we must turn to the Advanced register records. As the number available increases, the more readily the answers can be given. More than 3000 yearly records of Guernsey cows have now been completed. These show an average milk yield of 8544 lbs. milk and 426.80 lbs. butter fat. Considerably over one-third of these were for heifers with their first calf, which makes the showing more credible. 564 of the total gave from 10,000 to 19,000 lbs. of milk and from 500 to 1000 lbs. of butter fat.

The limit of production is not yet reached. The individual and the average yield of milk and butter for Guernseys is steadily growing. The Guernsey cow not only heads the list at the present time over all breeds, but seems likely to hold it. Peterboro, N. H., July 1, 1914.

Wm. H. Caldwell, Sec'y

#### PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.

#### Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

#### JERSEY COWS

Some of the greatest producers in the world.

Buy 20 young cows or heifers from me and I'll head them with a Great Young Bull—FREE.

#### E. L. Brewer

Satsop, Wash.

#### Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD Route 1, Box 12 Fairbanks, Wash.

#### REGISTERED DUROCS

(Immune to Cholera)

All ages for sale, male or female, from prolific families.

Shamrock Wander heads the herd.

Shamrock Daisy farrowed 12 pigs.

Shamrock Rose farrowed 14 pigs.

Selah Agness farrowed 16 pigs.

Write for prices.

A. H. IRISH, Wapato, Wash.

#### SOLID LIGHT COLORED JERSEY BULL CALF

Born October 10th, 1913; sire one of the best sons of Eminent; dam an American bred cow strong in the blood of Tormentor and Pedro; this cow is on test for the Register of Merit and in first six months produced 5665 lbs. milk.

Price of calf \$75, registered and crated.

DAVID C. DILWORTH Opportunity, Wash.

#### Berkshires

Very prolific, early maturing stock of high quality. Some fine youngsters ready for delivery. Satisfaction assured.

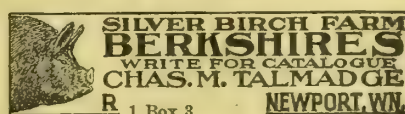
PETER HANSON, Box 62, East Stanwood, Wash.

#### BERKSHIRES

Choicest Stock—All Ages

NEWTON H. PEER

TACOMA or QUINCY, WASHINGTON



#### Electric Light Farm

#### A. J. C. C. Jerseys

FOR SALE

Son of Gertie's Brown Lad whose dam has official record of 653 lbs. butter in one year. The dam of this 5-months-old calf made over 10,000 lbs. milk and 595½ lbs. butter with first calf. Solid color, mulberry fawn, priced at \$100.00 for quick sale.

Burt Pease Ellensburg, Wash.

#### Registered Jerseys

Young bulls from heavy producers

For Sale

Also some choice pure bred

Poland China Pigs

Write for prices

E. L. Lloyd

Box 466 Monroe, Wash.

#### Purebred Durocs and Berkshires

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

Berkshires — We are offering some good breeding sows to make room for others. We buy and sell large quantities of choice hams and bacon. Quality is our motto. Write today.

AUGUSTINE & KYER 115 First St. Seattle, Wash

#### O.I.C. Hogs

English Shire Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

#### English Berkshires

Sunset Duke the 4th, 156579, heads my Registered Herd. Champion Sow 1912-13 State Fairs.

Write for prices and particulars.

J. A. SIMONSON, North Yakima, Wash.

GOOD REGISTERED BERKSHIRES — Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.

#### DUROC PIGS

REGISTERED and REASONABLE. EITHER SEX

J. HANKS & SON, Ellensburg, Wash.

#### FOR REGISTERED DUROC JERSEY

bred sows and male pigs, write McK. Edwards, Valley, Wash.

#### Fine Registered Duroc Jersey Pigs

For Sale—Young Pigs, Brood Sows and extra fine Herd Boars. Write

JAS. S. COURTNEY White Salmon, Wash. R.F.D. No. 1

#### SOME CHOICE PURE BRED and cracking good BOARS

3 to 7 months old Write us for prices. "The B.K.M. Herd of Berkshires."

WOODLAND FARM, Lacey, Thurston County, Washington



# Public Sale of HOLSTEINS

Mount Vernon, Wash.

July 25, 1914 at 10 A. M.

**60**  
HEAD

on THOMPSON FARM  
one half mile out on Riverside Drive

**60**  
HEAD

40 Head Registered Holsteins, cows and heifers.

5 Head of Registered Bulls, with excellent ancestral records and noted breeding.

20 Head of high grade Cows and Heifers.

Herd Tuberculin Tested by State Authority.

This will be the largest and best offering of registered Holsteins ever made on Puget Sound, and all who are interested either as a prospective buyer or in the development of the dairy industry are welcome.

Further particulars on request.

GEO. A. GUE, Auctioneer.  
Ridgefield, Wash.

E. H. THOMPSON, Prop.  
Mt. Vernon, Wash.



WE ARE IN THE MARKET FOR A FEW

## Mortgage Lifters

Have You a Mortgage on Your Farm?

IF SO OR NOT

BUY HIGH CLASS GRADE HOLSTEIN DAIRY COWS  
FROM THE  
SPOKANE GRAIN CO.

THE COWS WILL DO THE REST.

IF YOU CANNOT BUY COWS, BUY HOLSTEIN  
CALVES. WE HAVE BOTH FOR SALE, AND GOOD  
ONES. COME AND SEE US. IF YOU CANNOT COME,  
WRITE US.

The May shipment of high class cows is ready for immediate delivery.

**Spokane Grain Company**

Phone Sidney 444

4915 Eighth Ave. So.

SEATTLE, WASH.

JERSEY OR GUERNSEY FAMILY COWS

Please mention this paper

Please mention this paper

## Registered Guernseys and Registered Holsteins



Considering the warm and dry season the demand for Guernseys has been good the past month. With cheaper feed and firm prices for butter fat there is every indication for a brisk demand for choice Guernseys in the early fall. As they are not too plentiful, the prospective buyer should lose no time to provide for a selection while we are making up orders for early fall shipments.

In Holsteins we have heifers and some cows 2 to 4 years old, nearly all fresh cows of excellent dairy type and good yielders. Our young calves are attracting much attention, and most of them can hardly fail to make noted records, for they have high record breeding and correct form.

We can supply both Registered Holstein service bulls and bull calves and fresh cows for immediate orders, but would advise early application for those requiring them now or in the near future.

Please write specifying wants or make appointment to call.

**FRYAR & COMPANY**

Please Mention  
This Paper.

SUMNER, WASH.



## HOLSTEIN Shipment Arrived July 13

A very choice lot of registered and high grade cows, fully equal to any we have previously brought and sold.

The registered stock consists of cows and heifers of the best breeding and from families of noted milk and butter fat producing records, ideal dairy type and individuality. A number of them are in calf to good son of the King of the Pontiacs.

Full particulars concerning records and pedigrees on application.

In high grade cows we have some very choice specimens sure to be profit makers in any dairy herd with ordinary care.

Good judges of cows have an excellent opportunity to pick some good specimens and we suggest immediate investigation or appointment of date to call.

**VAN WOERDEN & FISHER**

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

## THE WORLD'S RECORD DAIRY COW THE GUERNSEY COW MAY RILMA

Gives . . . 19673 lbs. milk

Containing 1073.41 lbs. butter fat

IN 365 DAYS

MAKING HER THE CHAMPION DAIRY COW OF ALL BREEDS

Write for the story of this cow's work and receive with it  
general literature about the breed

AMERICAN GUERNSEY CATTLE CLUB

Box N. W.

Peterboro, N. H.



MAY RILMA 22761; A. R. 1726



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., AUGUST, 1914

No. 8

## Serious Complications for Exporting

The gravity of complications arising from the general European war is demonstrated particularly in the conditions surrounding exports. With most of the ships flying foreign flags and subject to blockage or capture, the possibility of exports from the United States this season is small indeed.

At no time in the history of the country has the need for American vessels been seen more than at this time—at no time has the lack of same been so clearly evidenced. The Northwestern section depends upon its fruit export markets to a great extent. Not only is this in a specific way, but generally for the tying up of exports will throw millions of barrels of apples back upon our domestic markets, thereby hampering distribution efforts as a whole.

The following telegram was sent by the Northwestern Fruit Exchange to senators and representatives from Oregon in Washington:

"The interests of Northwestern apple and pear growers as well as those of every fruit grower in the United States are vitally involved in proposal to admit foreign vessels to American registry. Exports of fresh apples from the United States averaged for last three years approximately two and a half million barrels annually, including boxes figured at three to barrel. All but insignificant proportion of this tonnage has been transported in foreign bottoms, principally British and German. With transportation available probably over three million barrels including boxes will find market in Europe this season; without it this surplus will be thrown back on domestic markets with results probably disastrous. We urge fullest protection for this important export."

To strengthen the plea for aid in this direction, a letter has been sent out to all the Northwestern branches of the organization asking them to urge their representatives in office to take action immediately along these lines.

To newspapers, bankers, tradespeople and the general public the necessity for relief of the conditions caused by the present conflict cannot help but prove apparent.

Readers will do well to urge upon as many members of congress as possible to take speedy action in providing for exporting our surplus fruits and produce.

### CREDIT BASIS FOR DAIRYMEN.

A good basis for credit is integrity, correct plans and faithful service.

When a group of dairymen will get together for the purpose of buying some good cows and dairy equipment, will adopt painstaking methods, good feeding plans, guard against unnecessary expense, use ordinary intelligence and some degree of regularity in the necessary work with their stock, then they are in shape to command the necessary finance at a reasonable interest rate. A country banker once said that during a time of stringency he was obliged to turn away some borrowers, but the farmer who habitually was seen with

in June. With but little other grain feed added they are now keeping up the milk flow of their herds in good shape, while those without silos have more or less difficulty, because the pastures are drying up even on the richest and best hay lands. It is safe to say that silos will be greatly multiplied in this section by another year, and in preparation for the feed crop, there will be considerable seeding of clover in September with later sowings of oats and vetch. Quite a number of the farmers are growing corn for silage, now being able to

fall produced a large crop by the last of spring, affording time for a second crop this season. The kale and some of the turnip crops may be seeded here in early September to produce feed through the winter. There are great opportunities for some profit margins in dairying in the Coast section, providing the cost of feed is reduced to the minimum and that can best be done by giving careful attention to the practice of early fall seeding in the cropping plan.

### THE EIGHT HOUR LAW.

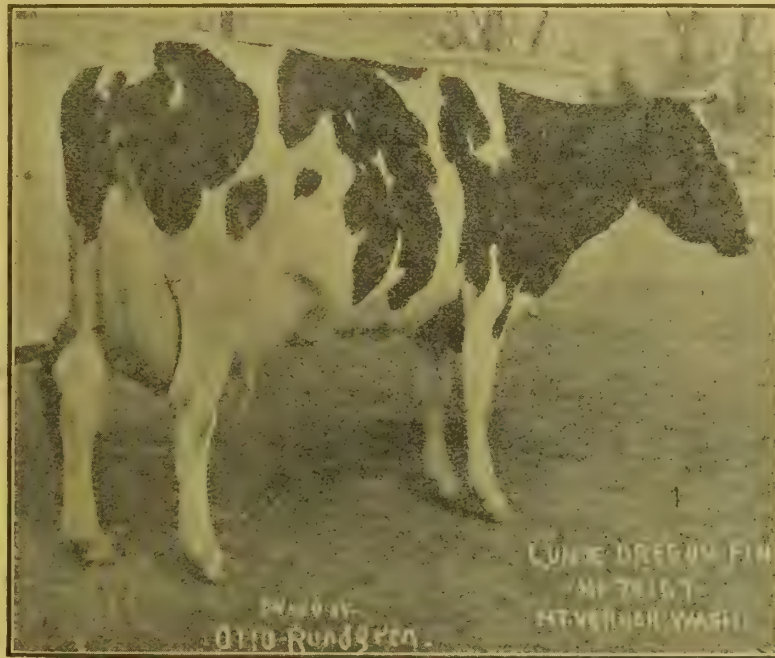
Most farmers take the view that the proposed universal eight-hour law does not remedy existing difficulties, while it unnecessarily burdens and handicaps farming operations. In its broadest sense service is a privilege. The problem is rather that of adequate reward based not only on a specific measure of individual service, but in addition thereto the benefits and responsibilities accrued because of the group or community. In many cases the eight-hour law will compel the laborer to work all the harder searching for his job, while the farmer would be unable to adjust conditions for his own interests in such manner as to remove the dilemma of the servant. The problem of justly sharing the rewards of toil is not solved by the eight-hour law.

### SOUTH AMERICAN MARKETS.

The Pacific Coast fruit growers, farmers and manufacturers have now an excellent opportunity to get into the South American markets which were formerly held by the Germans. We should send representatives there, ascertain what is wanted, in what form, then supply the goods to please them.

We should have more refrigeration equipment, both in the fruit districts and at the sea ports. Cooling rooms with temperature ranging from 50 to 55 degrees, without sudden changes, prolongs the keeping quality of many of the fruits and green stuffs. By careful attention engineering problems of storage are not difficult of solution. The main plan of importance is to make a survey of South American market conditions, then make immediate preparations to fill their needs.

The war cloud looks thick and black. The present prospects are that Europe will require an immense amount of foodstuffs. That being the case we should prepare at once for real farming, figuring on the production of bumper yields of the classes and varieties of products which can be stored for some length of time if necessary.



A record of over 100 pounds milk a day and over 20,000 pounds a year.

a little cow manure on his boots was always a safe credit risk.

In one of the implement stores of Tacoma recently a clerk had a prospective customer for a cream separator, being a stranger and able to make only a very small payment, the question of sale was put up to the manager, who said: "Yes, if he is a dairyman let him have it. I have never lost any money when selling to a dairyman." As a rule a good dairyman has no trouble to borrow money and it is easier still when a number of farmers work together under some practical operating plan.

### SKAGIT COUNTY FARMING.

Hay and oat raising is yet a leading feature of Skagit county farming, particularly on the rich tide land flats, but gradually the dairy herds are enlarging as the condensers and creameries offer increased markets for milk and cream. The change to dairying necessitates the growing of more clover and vetch. Quite a number of the dairy farmers had good crops of oats and vetch, seeded mixed early last fall, and put into the silo

obtain acclimated seed.

The prevailing dairy breed throughout the valley is Holstein, mostly high grade, above the average as producers. A few enterprising breeders have introduced pure bred stock, among them J. H. Hulbert, Jasper Parker, Otto Rundgren and E. H. Thompson.

In some of these herds are cows yielding about 100 pounds milk per day, and the neighboring dairymen are just beginning to realize the value of good breeding whereby these heavy producers can be bred and raised with some degree of certainty.

The introduction and successful operation of the milking machine will cause a more rapid transformation from grain and hay growing to dairying.

### FALL SEEDING.

Much advantage is to be gained by farmers in the Coast section through early fall seeding. Clover sown in the early part of September last year produced a bumper silage crop in June, with a second crop now coming on. Oats and vetch seeded in early



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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Vetch and oats seeded in the fall in the Coast section, then cut and put into a properly built silo in June, has solved the problem of keeping up the milk flow during the dry summer months quite satisfactorily for a good number of our leading dairymen. Fall seeding of these crops is now the program of Coast dairymen. Seedsmen should be advised early as possible of prospective orders that they may stock up sufficiently to meet all demands, for it is likely to be heavy and late buyers might be disappointed in their seeding plans.

There will be a gradual advance on foodstuffs as the war progresses, though the government will curb speculation when carried beyond reasonable bounds. Increase of market prices is likely to make producers indifferent about the movement now on foot to get closer to consumers unless special attention is devoted to the get-together marketing plans and the control which is within the farmers' grasp. Producers cannot afford to take any backward step in their efforts to associate together for conducting the business of selling.

The Czar of Russia says it is inadmissible to permit the favorable financial position of the state to depend on the destruction of the moral and economic strength of the great multitude of Russian citizens when speaking about the liquor question. Money making or revenue from liquor is becoming unpopular with all civilized governments.

## DAIRY COWS AND STUMPS.

The dairy cow will be a leading factor in the logged-off land problem. The rich valley lands of the Coast section within easy reach of transportation pays out on the cost of clearing in a few years. It is the upland clay soils with stumps which are slow in being developed, but much of this is worth from \$10 to \$25 per acre for pasturage. Some of our leading dairymen seed clover and mixed varieties of grass seed on this stump land in the early part of September, harrowing or hand-raking

among the stumps to cover the seed as best they can. This affords pasture by another season and gradually the stumps can be taken out from year to year as opportunity affords.

## SOUTH AMERICAN MARKETS FOR CANNED GOODS

Although South America imports about \$15,000,000 worth of canned goods annually, the United States furnishes only about 18 per cent. of the total, of which the principal item is canned salmon. That the sales of canned goods in this field can be greatly increased is the opinion of Commercial Agent E. A. Thayer, of the Department of Commerce, who recently completed an investigation of the Latin-American markets for this line of goods.

The results of this investigation are incorporated in a monograph issued by the Bureau of Foreign and Domestic Commerce. This publication treats of the consumers' preferences, sales methods, pure-food laws, credit terms, shipping costs, and other subjects in the various countries of interest to American Cannerymen. Copies of the monograph (special Agents Series No. 87) may be obtained from the Superintendent of Documents, Washington, D. C., for five cents each.

## ESTIMATED WASHINGTON FRUIT CROP

The estimated fruit crop of Washington by Assistant Commissioner T. O. Morrison of the department of agriculture show an expectation of 16,500 cars of fruit for shipment this year, against 11, 271 last year and 15,055 in 1912. Increase is expected over last year's production in all of the fruit districts of the state, but only in the Wenatchee valley and Ferry-Stevens county districts is an increase expected over 1912. The largest increase being in the Wenatchee valley, where it is expected that 6,800 cars of fruit will be shipped against 4,972 last year and 4,912 in 1912.

"In Western Washington," says the report, "the numbers of canneries greatly exceed those of Eastern Washington, even though the bulk of the fruit crop is produced in Eastern Washington, only two canneries being reported from the east side of state. Estimate is placed upon the Sumner and Puyallup canneries, the largest in the state, as having an output this year of 470 cars of canned goods. The prune crop for Clarke county is estimated at 1,500,000 pounds, and the berry product of the Island districts is placed at 240 cars.

The fruit crops of Oregon, Idaho, and Montana combined, will be a little less than that of Washington. The yield is up to normal and considerable new acreage is bearing for the first time.

## FRUIT DIRECT TO SOUTH AMERICA

Markets Somewhat Limited.

The South American markets are being canvassed by the personal representative, George C. Gaede, of the Northwestern Fruit Exchange, of Portland, who sailed from New York on May 30th for Buenos Ayres, and is still in South America, where he is meeting with most encouraging success. Deals involving over 30,000 boxes of Northwestern apples have

been closed, with other deals pending, cables received by the Portland headquarters of the Exchange.

For the first time Northwestern fruit growers will get the full benefit of the sales in these markets. Buenos Ayres and Rio are both notoriously high-priced markets, and for years, New York and London middlemen have monopolized this trade, buying at the cheapest possible prices from growers in the Northwest, and turning the most deals at a very handsome profit for themselves. While this was perfectly legitimate business, the Exchange regards this business in exactly the same light it does the European business; namely, that the straightest lines between producers and consumers, consistent with practical methods, promise maximum results for producers and the best service and protection for consumers.

In both Rio and Buenos Ayres, boxed apples have in the past been selling as high as \$16.00 per box gold, while the same fruit has netted the growers out here only ordinary prices. This condition is not conducive to the good of either the consumer or the Northwest farmer, and members of the exchange are therefore congratulating themselves on the opening of these valuable markets that have been closed on them, except indirect, heretofore.

The Exchange's cabled advices are to the effect that these South American markets, while valuable, are quite limited, and that engagements have already been made for practically the entire season's requirements and that a warning should be given against consignments to those markets unless an outlet is fully arranged for in advance on the other end. It is stated that unless these conditions are fully met, disaster awaits the unwary shipper. As freight rates from the Pacific Coast to Buenos Ayres are very high (about \$1.75 per box; through via New York) only those with the very best connections and detailed knowledge of the financial and business condition prevalent in those countries should attempt this traffic.

## GOOD SEED TESTS

Among a large number of public schools which obtained seed for test and planting plots, the school at Winlock, Wash., reported to Aabling and Ebright Seed Company, Seattle, donors, results showing that the seed from their firm surpassed that of several others in vitality.

On S. B. Cauliflower, Danish Cabbage and Victoria Rhubarb, the test was 100 per cent. and on a list of other garden and grass seed the record was 95.264 per cent. Kentucky blue grass obtained by this firm has a purity test of 99.03 per cent. The Aabling and Ebright Seed Company have erected a four story brick building 40x60 feet to accommodate their increasing business. The first floor is devoted to the fertilizer department, the second to the wholesale, the third to storage of seeds, etc., and the fourth to poultry supplies and implements.

The Coffman, Dobson & Co., Bankers, Chehalis, Wash., announced their thirtieth anniversary on August 11th. This institution has grown to be a powerful and most influential factor

in the development of Southwest Washington. It encourages every honest endeavor to build up the rural industry and the farmers of this district are fortunate to be within reach of a bank whose managers so thoroughly understand the principles and conditions essential for the welfare and comfort of those engaged in farming in that part of the state.

## ALCOHOL IN FRUIT JUICES

By a recent decision of the department all fruit juices to which alcohol has been added must be plainly labeled to show this if they are to be shipped in interstate commerce after September 1, 1914. In the opinion of the department such names as "Peach juice," "Cherry Juice" should be applied only to fruit juices which are unfermented and which contain no added sugar, alcohol, or

# Pears Wanted

The Puyallup and Sumner Fruit Growers' Association can use quantities of pears for canning, to measure not less than 2¼ inches through the bell at \$20 per ton, delivered at Puyallup or Sumner. Pears should be picked grass green. Write

W. H. PAULHAMUS,  
Pres. P. & S. F. G. Assn, Puyallup.

# PEONIES

The Beaverton Nursery, of Beaverton, Oregon, has purchased the entire stock of peonies formerly owned by E. J. Berneche, at Olympia. This collection of peonies is practically the only extensive collection of peonies west of Nebraska. There is no flower grown today which is so popular as the peony. Some of the newer varieties being very far superior to the old-fashioned peony as most of us know it.

Peonies are best when planted during the month of September, and when so planted will give bloom the following season. All parties interested in flowers should send to the Beaverton Nursery for a copy of their recently published catalog. This catalog is the only one of its nature dealing with peonies only.

The Beaverton Nursery is owned by Howard Evarts Weed, a well known landscape architect, who has had much experience in landscape gardening in the Northwest. Those in doubt about arrangement of ornamental plantings are invited to send to Mr. Weed dimensions of their grounds, and he will make up a planting sketch showing where and what ornamentals should be planted thereon for best effects.

## WANTED

A family with some experience in poultry raising and fruit growing to occupy an improved five acre water front property. An ideal and beautiful location with excellent markets and of easy access. A little ready cash required. Will lease or join in a cooperative venture for a term of years.

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Box 1604, Tacoma, Wash.



other substances. In the past alcohol has been frequently added as a preservative to these preparations which are used for such purposes as flavoring beverages or preparing cordials. After September 1, however, goods that do not comply with the new ruling and indicate this fact on their labels will be denied entry into this country, and if found in interstate commerce will be subjected to appropriate action by the authorities.

#### CANNING FRUITS AND VEGETABLES.

Home Methods Described by Justo P. Zavalla, before California Fruit Growers Convention.

In all cases the fruit should be of the best quality if high commercial grades are to be obtained.

In the preparation of the raw material it has to be sorted as follows: First, according to size of fruit, large, medium, small; second, according to ripeness of fruit, green, medium, over-ripened; third, according to appearance, sound, blemished.

In order to accomplish this operation the help should be furnished with wooden boxes or any other thing suited for that purpose in which to put the sorted fruit.

This operation is one of the most important features of the different steps of canning and great care should be taken in order to be sure that they have been carried out.

Apricots and peaches should be cut in halves, pitted and classified as follows: Green, medium, soft, pie, blemished. Green fruit, this fruit is not perfectly ripe, but is of good size and sound. Medium fruit, fruit of an ordinary size, sound and sometimes larger and in good condition of ripeness. The greatest portion of canned fruit belongs to this grade. Soft fruit this fruit is also of good size, and sound, but shows a greater degree of ripeness. Pie fruit, this fruit is over-ripened and should be used for pie making or the cheaper grades of fruit. Blemished fruit, in this sort of fruit we find all degrees of ripeness. This is not sound fruit, and is generally placed in what is called gallon pie can fruit, and placed in what is termed the "pie grade." After this operation comes the peeling which can be done by hand or by the use of a 10 per cent. solution of caustic soda. The temperature of the water should be kept at the boiling point, and the fruit should be submitted to the action of this solution from 30 to 40 seconds, depending on the conditions of the fruit and the excess lye removed immediately by washing. When peeling by hand the Pomona peeling knife is generally used and also the Carmichael pitting spoon. In all cases after fruit has been peeled it should be carefully washed before it is sent to the canning tables.

Cherries, grapes, strawberries, raspberries, blackberries, etc., must be stemmed and classified according to what has been already mentioned.

Plums have to be sorted according to size, appearance, degree of maturity and perfection of washing. Cherries and grapes are sometimes pitted, cherries by machine and grapes by hand.

Pears have to be cut in halves, lengthwise, peeled, cored, and classified according to size. In case sliced grades of peaches and apricots are to be prepared, this operation can be done by hand, using a well sharpened knife.

#### Canning.

The next important operation is the filling of the cans, which is done by hand and according to standard weights, depending on the size of the cans.

To give a better understanding of the weight of the cans filled with fruit without the syrup, the different grades and also the number of pieces that each can contains is given in the following table:

#### PEARS

During the operation of filling the cans plenty of water should be used in order to wash the fruit thoroughly and avoid the browning of the pears when they are left dry. The pieces in the cans should be so arranged as

to leave plenty of room for the syrup and also to obtain the required weights.

Special care should be taken in the matter of sorting the fruit before it is put into the cans, in order to obtain a uniform pack. The cans used for canning purposes should be stamped with a simple combination of letters in order to identify the concentration of syrup that should be added and also the length of time that they should be cooked. A previous operation to filling the cans is the washing of them.

#### Syruping and Preparation of the Syrups.

In general the syrup can be prepared in a tank. The sugar and water may be boiled by a current of steam or by other means. When the foam which appears at the surface of the boiling syrup goes down to the bottom of the tank it is ready to be racked into another tank in which it is diluted to the required gravity. The syrup before being used should be carefully filtered. In this way it will show a bright color and consequently a good appearance in the cans. In the preparation of syrups it is necessary to use a thermometer in order to know the temperature of the syrup and the corrections to be made according to the readings registered by the hydrometer. To use the hydrometer fill a glass cylinder with the syrup to be tested and insert the hydrometer. Read the per cent. sugar at the surface of the liquid. A Balline hydrometer is best for this purpose. In order to fill the cans with the correct degree of syrup it is necessary to identify the grade of fruit they contain by looking at the combination of letters that we have referred to in a previous paragraph. The temperature of the syrup as well as the Balling must be read to get an accurate idea of the true per cent. of sugar. By use of the following rule the temperature correction is easily made.

#### Temperature Corrections for Sugar Tests Hot Syrups.

Take sugar per cent. by Balling hydrometer and Fahrenheit temperature. Subtract 60 from the temperature, multiply by .0490, add this last figure to the sugar percent. shown by the hydrometer. Result is true per cent. of sugar. Example: Balling=50 per cent. Temperature=175 per cent. Then the rule is:  $175-50=125$ ;  $125 \times .0490=5.0$  per cent.  $50+5.1=55.1$  per cent. Therefore 55.1 per cent is the true reading. This temperature correction is very important and should be made.

#### Capping.

After the cans have been filled with syrup they are sent through the exhausting boxes in the large canneries where double seaming machines are used for that purpose, but when canning at home this operation is done by hand, and if carefully done there will be no danger of putting the fruit in contact with the acid and lead used. The capping of the cans is very simple, and it only requires a little practice to make a skilful operator. After the caps are put on the cans the soldering fluid should be added with the aid of a little brush, after which the hot capping steel is put over the cap, which melts the lead they contain. If this operation is perfectly well done there will be no leaks. Leaks are to be avoided as they in time will become swells, and therefore result in the loss of the finished product. The vent hole is the center of the cap is left open till after exhausting of the cans.

#### Exhausting.

This operation has to be done in order to expel excess of air that the cans contain, which, during the sterilization, will develop a great pressure, the caps of the cans will bulge, and therefore the storage of the cans becomes difficult. The length of time for this operation varies from four to five minutes when the water is at the boiling point. Any tank filled with water of the required capacity can be used for this purpose, provided that the top of the cans should not be covered with water, which otherwise will penetrate the cans and will decrease the commercial value of the products.

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#### Cooking.

After the exhausting operation the cans are tipped and then are ready to be sterilized. Tipping consists in soldering the vent hole with a drop of solder and hot tipping steel. The cooking operation is very important and the final results of the preceding processes of canning depend on the way this operation is accomplished. In general the duration of the steriliz-

must be bright without any particles of fruit, especially in the case of high commercial grades.

The proper texture of the fruit can be ascertained by using a spoon with which every piece of fruit under observation should be tested. If the pieces of fruit are penetrated by the spoon with light pressure it will mean that they have received the proper degree of cooking. The same facts

|                          | Size of Cans | Hot Water Outfits at 212° Bath Minutes | Water Outfits Above 212° Seal Minutes | Steam Pressure 5 lbs. or More Cooker Minutes | Cooker 10 lbs. or More Pressure Minutes |
|--------------------------|--------------|----------------------------------------|---------------------------------------|----------------------------------------------|-----------------------------------------|
| Apples                   | 3            | 15                                     | 15                                    | 10                                           | 6                                       |
| Apricots                 | 3            | 15                                     | 12                                    | 10                                           | 8                                       |
| Asparagus, greens        | 2 or 3       | 60                                     | 60                                    | 40                                           | 30                                      |
| Beans, Lima and String   | 2 or 3       | 90                                     | 60                                    | 60                                           | 30                                      |
| Blackberries, Dewberries | 2 or 3       | 8                                      | 8                                     | 6                                            | 3                                       |
| Cherries, Peaches        | 2            | 15                                     | 12                                    | 10                                           | 5                                       |
| Corn, without Acids      | 2            | 240                                    | 180                                   | 60                                           | 40                                      |
| Grapes, Pears, Plums     | 2            | 15                                     | 15                                    | 10                                           | 8                                       |
| Peas (field)             | 2            | 60                                     | 60                                    | 40                                           | 30                                      |
| Peas (garden or English) | 2            | 60                                     | 60                                    | 40                                           | 30                                      |
| Pineapple                | 2 or 3       | 30                                     | 25                                    | 10                                           | 10                                      |
| Raspberries              | 2 or 3       | 15                                     | 10                                    | 6                                            | 3                                       |
| Sauerkraut               | 3            | 50                                     | 50                                    | 40                                           | 25                                      |
| Sweet Potatoes           | 3            | 80                                     | 70                                    | 60                                           | 40                                      |
| Strawberries             | 3            | 10                                     | 8                                     | 6                                            | 3                                       |
| Tomatoes                 | 2 or 3       | 22                                     | 20                                    | 10                                           | 6                                       |
| Quince                   | 3            | 30                                     | 25                                    | 15                                           | 10                                      |
| Tomato Juice             | 2            | 20                                     | 20                                    | 15                                           | 10                                      |
| Pumpkin                  | 3            | 50                                     | 50                                    | 40                                           | 30                                      |
| Figs                     | 3            | 30                                     | 20                                    | 10                                           | 5                                       |
| Squash                   | 3            | 50                                     | 40                                    | 30                                           | 20                                      |
| Spinach                  | 3            | 60                                     | 60                                    | 40                                           | 30                                      |
| Rhubarb                  | 3            | 25                                     | 25                                    | 15                                           | 10                                      |
| Beets                    | 3            | 20                                     | 20                                    | 15                                           | 10                                      |

Note—This is a supplement to Farmers' Bulletin No. 521. By following the general instructions of the Bulletin in connection with the time table, you will have the information necessary to do the work of canning all kinds of fruit and vegetables.

(O. H. Benson) U. S. Department of Agriculture.

#### SYRUPS FOR USE IN CANNING FRUITS

| Sugar  | Water   | Baume Degree | Per Cent Sugar | Balling Degree |
|--------|---------|--------------|----------------|----------------|
| 1 pint | ¼ pint  | 40           | 74             |                |
| 1 pint | ½ pint  | 32           | 58             |                |
| 1 pint | 1 pint  | 24           | 44             |                |
| 1 pint | 1½ pint | 17           | 31             |                |
| 1 pint | 2 pint  | 14           | 25             |                |

#### BRINE FOR VEGETABLES

- 1 pound salt to 12½ gallons water gives 1% brine.
- 2 pounds salt to 12½ gallons water gives 2% brine.
- 3 pounds salt to 12½ gallons water gives 3% brine, etc.

#### Table of Grades and Syrups Used in Canning

| Fruit        | Syrup for Spec. | Syrup for Extras | Syrup for Extra Stands | Syrup for Stands | Syrup for Seconds |
|--------------|-----------------|------------------|------------------------|------------------|-------------------|
| Apricots     | 50%             | 40%              | 30%                    | 20%              | 10%               |
| Peaches      | 50%             | 40%              | 30%                    | 20%              | 10%               |
| Pears        | 40%             | 30%              | 20%                    | 15%              | 10%               |
| Cherries     | 40%             | 30%              | 20%                    | 15%              | 10%               |
| Plums        | 50%             | 40%              | 30%                    | 20%              | 10%               |
| Grapes       | 40%             | 30%              | 20%                    | 10%              | 10%               |
| Strawberries | 60%             | 50%              | 40%                    | 30%              | 20%               |

#### PEARS

| Grade of Fruit | Weight in oz. | No. of Pieces | Size of Cans |
|----------------|---------------|---------------|--------------|
| S. Extras      | 23½ to 24     | 8 to 10       | 2½           |
| Extras         | 23½ to 24     | 10 to 12      | 2½           |
| E. Standards   | 23½ to 24     | 12 to 14      | 2½           |
| Standards      | 23½ to 24     | 14 to 18      | 2½           |
| Seconds        | 23½ to 24     | 18 to 22      | 2½           |
| Pie            | 24 to 25      |               | 2½           |
| Water          | 24 to 25      |               | 2½           |
| Extras         | 28 to 30      | 7 to 11       | 3            |
| Extras         | 14 to 16      | 9 to 14       | 2            |
| E. Standards   | 13 to 14      | 9 to 12       | 1            |
| Extras         | 68 to 70      | 23 to 25      | 8            |
| E. Standards   | 68 to 70      | 40 to 45      | 8            |
| Pie            | 80 to 82      |               | 8            |
| Water          | 80 to 82      |               | 8            |

ing depends upon ripeness of the fruit.

It should be borne in mind that these figures cannot be taken as absolute because they vary widely according to the facts already established. The proper degree of cooking varies with the varieties of fruit under processing. We may illustrate this, taking peaches as a practical example. The proper degree of cooking is recognized when the samples opened show the following characteristics: Uniform color over the whole surface, soft ened texture within certain limits but should not be too soft. The syrup

should be taken into account in testing other kinds of fruits.

#### Cooling.

As soon as the cans have been cooked sufficiently they must be quickly cooled in water in order to decrease the action of the temperature on the fruit. The water used for this purpose should be continually renewed because it soon becomes warm.

#### Testing for Leaks.

After the cans have been cooled, each of them should be tested for leaks. It is very easy to recognize leaky cans, due to the sound that



they produce when they are struck with a little piece of wood. In some cases, due to lack of filling the cans, they produce a similar sound to the leaky ones, but it can be distinguished by squeezing them. In the case of leaks they should be separated and sent back to the processing department, where they should be put in a tank containing hot water, but not boiling, in order to place the leaks, which should then be carefully soldered.

#### Storage.

The cans should be piled in groups according to the quality of fruit they contain. Previous to storage the cans should be lacquered in order to give them a better appearance and also to prevent the tin becoming rusty. Lacquer may be made by dissolving shellac in gasoline.

#### Labeling.

This operation is easily done by hand. The labels to be used should bear the name of the canner, quality of fruit contained in the cans and also the weight. There are in the market different styles of labels, and it can be said that each brand has its own label.

The handling of the home canning outfits is very simple, and following the instructions given by the various concerns that sell them, good results can be obtained.

#### Vegetable Canning.

The operations involved in the process of canning vegetables are very simple, and they may be summarized into three general principles: The use of sound raw material, the observation of a very strict hygienic procedure from beginning to end, great care in maintaining the proper temperature while cooking in order that all the micro-organisms that may have accumulated during the handling of the unprocessed raw material will be de-

stroyed. With these purposes in view we will give a brief description of the different manipulations involved in the process of canning tomatoes, Tomatoes.

The first step is to secure a good, sound, raw material which should be thoroughly washed with cold water. After this operation the tomatoes are scalded till the skin becomes loose. The water used for scalding should be kept as clean as possible. The skin of the tomatoes is taken off by hand, and the peeler should at the same time cut off all the decayed or green parts of the tomatoes in order to secure a better looking product. The peelers should be furnished with buckets in which the peelings and peeled tomatoes should be put separately. Next to this operation comes the filling of cans, which contain from 25 to 28 ounces standard pack cans No. 2½ and from 40 to 42½ ounces solid pack cans No. 3. To obtain those two grades of pack the peeler should classify the tomatoes according to size.

The cans which are supposed to be solid pack must contain nothing else but whole tomatoes with very little tomato juice. After the tomatoes are put in the cans they should be compressed in order to eliminate excess of juice, which gives a bad appearance to the finished product, and at the same time constitutes a fraud. In case of standard pack, tomatoes of smaller size than those used in solid pack are put up in the cans which afterwards are refilled with tomato "puree." This tomato juice or "puree" is made of overripened tomatoes which are deprived of the seeds, and the juice is concentrated to a certain extent and cooked with a certain amount of salt. The variety of tomatoes mostly used for canning purposes is called "Red Stone."

## AGRICULTURE

## The Basis of Prosperity

### Farm Credit and Its Use.

Some valuable suggestions are given on Farm Credit and how to use it in Farmers Bulletin 593, U. S. Dept. of Agr., by T. N. Carver, in which he makes it plain that the will for honesty of purpose and adoption of methods tending towards success in practice are the essential requirements for credit. There is no magic nor mystery about credit or capital. Speaking broadly, there are probably almost as many farmers in this country who are suffering from too much as from too little credit.

Many a farmer would be better off today if he had never had a chance to borrow money at all or go into debt for the things which he bought. However, that is no reason why those farmers who know how to use credit should not have it.

Capital is brought into existence in only one way—that is, by consuming less than is produced. If one has a dollar, one can spend it either for an article of consumption, say confectionary, or for an article of production, say a spade. He who buys a spade becomes a capitalist to the amount of a dollar—that is, he becomes an owner of tools. The process is precisely the same, whether the amount in question is a dollar or a million dollars. If he does not have the dollar, his only chance of getting the spade is either to borrow it or borrow the money with which to buy it. That is, he must have credit.

#### How Capital is Secured.

There are, therefore, only two ways

of securing capital for the equipment of a farm. One is to accumulate it oneself, by consuming less than one produces; the other is to borrow it. The advantage of borrowing is that one does not have to wait so long to get possession of the tools and equipment. One can get them at once and make them produce the means of paying for themselves. Without them, the farmer's production might be so low as to make it difficult ever to accumulate enough with which to buy them. With their help, he may be able to pay for them—that is, to pay off the debt in a shorter time than it would take to accumulate the purchase price without them. That is the only advantage of credit in any business, but it is a great advantage to those who know how to use it.

#### Proper and Improper Uses of Credit.

Shortsighted people, however, who do not realize how inexorably the time of payment arrives, who do not know how rapidly tools wear out and have to be replaced, or who do not keep accounts in order that they may tell exactly where they stand financially, will do well to avoid borrowing. Debts have to be paid with deadly certainty, and they who do not have the wherewithal when the day of reckoning arrives, become bankrupt with equal certainty.

On the other hand, there is nothing disgraceful about borrowing for productive purposes. The feeling it is not quite respectable to go into debt has grown out of the old habit of borrowing to pay living expenses.

## WAR

Means desolation and millions of people in other lands will look to the United States for food supplies. It is a good time to plant trees with a view of filling the foreign demand for apples, dried and canned fruits. Determine the classes and varieties you will grow as suited to location and facilities for handling the output. Plant for specific purposes, trees which are thrifty, clean and true. We can supply them. Our stock is especially fine this year and being miles away from infested orchards our trees are free from blemishes. The most painstaking methods in the production are observed in every detail.

## THE HOME BEAUTIFUL

Many farmers have an abundance of plants and shrubs available to make their home grounds beautiful if properly arranged. Others require more or less of selections from the nursery for most pleasing effects. But the arrangement is important. Let us know what you have, your location and your plant preferences. Our information service is at your command.

Yours for the best in crops and home adornments,

WASHINGTON NURSERY CO.  
Toppenish, Wash.

Salesmen Wanted

## Nursery Stock

### FRUIT TREES

### SMALL FRUITS

### ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY  
F. J. Rupert, Mgr.  
SALEM OREGON

## A. S. Johnson & Co.



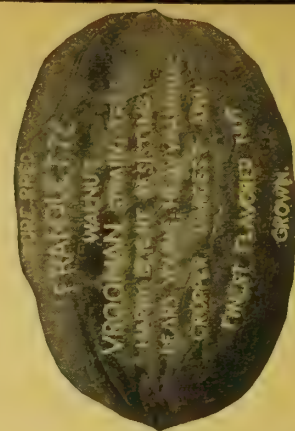
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## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

ACME REALTY COMPANY  
401 Equitable Bldg, Tacoma, Wn.



## Have You Read This?

"At my home on Nob Hill, I have two Walnut trees which I purchased from your Company. They are now thirteen years old; were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from those two trees last fall. My grocer pronounced them superior in size and flavor to California nuts."

E. W. Brackett, North Yakima.  
Space here forbids much explanation, but if you will write us, we will gladly explain the difference between the famous VROOMAN PURE STRAIN FRANQUETTE WALNUT and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc., in the West. ORENCO trees are planted from coast to coast because they are known to be always—dependable—first class.

## OREGON NURSERY CO.

Orengo, Oregon

Competent salesmen wanted.

## FILBERTS

Good plants of the best varieties of Filberts for the Pacific Northwest have been rather scarce, but we can supply a limited quantity. Those desiring any of these plants will do well to write booking orders at once. In small lots the bushes can be sent by parcel post.

OREGON NURSERY CO.  
ORENCO, OREGON

## Helping The Chickens

To get over the moult, to get rid of lice and to get into good laying condition will pay you well. Send today for circular describing the Herculean Strike - Breaker and a liquid lice-killer which has given a high measure of satisfaction at nominal cost. We reach buyers through parcel post. Satisfaction assured.

E. H. ROMBERGER, Manufacturer,  
3631 Interlaken Ave., Seattle, Wash.

### SPRINKLERS

Readers having water systems are making inquiry for handy sprinklers. The Hartford Sprinkler here illustrated is giving excellent service in parks and gardens this season. It is an excellent distributor of water and very popular. The spray is formed by a stream of water impinging upon the spoon at the top revolving it constantly. Under good pressure a radius of 40 feet can be irrigated at one setting. With hose attachment these sprinklers can be moved to cover considerable area during 24 hours. Most of those used are in 4 or 6 foot lengths and can be delivered by parcel post. They are sold by

HENRY MOHR HARDWARE CO.  
Tacoma, Wash.



That was regarded, perhaps rightly, as a sign of incompetency. It was then natural that men should not like to have their neighbors know that they had to borrow money. But to borrow for a genuinely productive purpose, for a purpose which will bring you in more than enough to pay off your debt, principal and interest, is a profitable enterprise. It shows business sagacity and courage and is not a thing to be ashamed of. But it can not be too much emphasized that the would-be borrower must calculate very carefully and be sure that it is a productive enterprise before he goes into debt.

This distinction between borrowing for a productive purpose and borrowing to pay living expenses will help to explain why religious leaders in times past have been opposed to interest. It is undoubtedly a bad practice for men to borrow money with which to buy articles for consumption, except in the most extreme cases. Articles for consumption are goods which are used to satisfy desires rather than to assist in production. Before the days of expensive machinery, when capital was not an important factor in production, such a thing as borrowing for productive purposes was practically unknown. The only borrowing that was done was for the purpose of buying nonproductive goods. This is a bad practice.

#### Principal More Important than Interest.

In the payment of a debt it is not the interest but the principal which gives the greatest trouble, except where interest rates are exorbitant. If a man borrows \$100 for a year at 7 per cent., he has to pay, at the end of the year, \$107. If he borrows at 5 per cent., he has to pay \$1.05. The difference is \$2. Now, \$2 is not to be despised. Good business consists in large part in looking after just such items as this. Nevertheless, it is only a little harder to pay \$107 than to pay \$105. The point is that the principal is the same in either case, and it is the principal which

gives the greatest trouble.

The reason it has seemed necessary to emphasize this elementary fact is that many people seem to imagine that if interest on farm loans can be reduced from 7 per cent to 5 per cent., or from 6 per cent. to 4 per cent., conditions will be easy for the farmers. It is important that interest rates be lowered wherever it is economically possible, but it is vastly more important that farmers should learn how to pay back the principal easily. The only way to do this is to use the money borrowed in such a way as to put one in possession of the means of repayment. If the \$100 which a man borrows is spent for fertilizer, which adds \$125 to the value of his crop, he should not find any great difficulty in repaying the loan, both principal and interest. If he uses it in such a way as to add only \$75 to his crop, he will have some difficulty in repaying the principal, saying nothing of the interest. It is more important that he should be able to use \$100 so as to add \$125 rather than \$75 to his crop, than it is that he should be able to borrow at 5 per cent. or even without interest.

An unproductive enterprise is not a safe basis for borrowing under any conditions. In other words, it is more important that the enterprise in which one is engaged shall be a productive enterprise than that the rate of interest at which one can borrow money is high or low.

The first and more important rule to be observed, therefore, in the use of farm credit is to make sure that it is for a productive purpose, that is to say, make sure that the purpose for which the borrowed money is to be used will produce a return greater than needed to pay the debt. Except in extreme cases, it is bad policy to borrow for the purpose of purchasing anything which will not help to pay for itself. As a rule, the purchase of these things should be postponed until the farmer has accumulated the wherewithal out of his own earnings.

## Electric Equipment on Farms.

Numerous farmers in the Northwest are now equipped with electric lights derived from gas engine power through storage batteries or by means of water power. Electric lights are handy; turn the switch, and the room, the house or the barn, as the case may be, is lighted and danger from fire is eliminated.

The Dayton Electrical Manufacturing Company state their plants can now do as efficient work with sixteen cells as formerly required sixty electric cells or more.

Low voltage current for lighting work was first used in Germany about six years ago, Germany being the home of the tungsten lamp. Low voltage isolated outfits have been manufactured and marketed for the past six years since the invention of the low voltage tungsten lamp with its well known efficiency and long life.

Low voltage Mazda (tungsten) lamps have very thick filaments, making these lamps very substantial and increasing the hour life of the lamps. Low voltage Mazda lamps will burn in any position and consume very

little current.

The only reason high voltage is used at all today is because it can be carried greater distance and over smaller wires than low voltage can, but 30-volt outfits are good for a distance of 1000 feet. Any man of average intelligence can install easily and at slight expense a complete lighting outfit.

The principal cost of operating is that of running the gasoline engine. A two h. p. 2-cycle engine was run for four hours and five minutes on one gallon of gasoline which was equal to a cost of about 5 cents per hour, figuring the oil at 20 cents. But many users charge the batteries while the engine is run for other work, therefore the cost is practically nothing.

A lighting plant consists of a dynamo, a switchboard and a storage battery. The dynamo charges the battery, and the battery acts as a reservoir which supplies current to the lights when and where desired. It works like a water supply outfit in which a pump fills a tank and the tank supplies water to various parts

# Quaker Trees

FRUITS  
ORNAMENTALS  
SHRUBS

A Fine Stock of Apples, Pears, Peaches, Plums, Prunes, Apricots and Small Fruits.

It is a good year to increase the ornamental planting. Thousands will come to the Pacific Coast seeking homes during the next few years. Do you wish to sell any part of your land, or your home place, or do you wish to encourage settlers who have some degree of taste and refinement? Then adorn your home with some ornamental plants, shrubs and trees. The cost is trifling compared with the actual value which may be derived. Our catalog contains valuable suggestions.

Write for catalog and price list today. State your requirements.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## MONTE VISTA NURSERIES

**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nelis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

**A. HOLADAY SCAPPOOSE, OREGON**



Rose Garden of Mitchell Nursery

Fruit Trees, Roses, Shrubbery, Perennials, Etc.

## Money Makers!

Sour Cherries and Gooseberries.

The Puyallup cannery could have used ten carloads more of sour cherries this season. Sour cherries are easily grown, not subject to disease and are prolific bearers.

A gooseberry planting will last for twenty years.

Write us for prices on these and other nursery stock.

## MITCHELL NURSERY COMPANY

Tel. Madison 207.

Larchmont Sta., Tacoma, Wash.

## The Puyallup Nursery

Hardy Ornamental  
Nursery Stock a  
Specialty

Be sure and visit our nursery when attending the Western Washington Fair in this city September 29 to October 4, 1914.

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Shipping season begins in October.

Everything worth while in Roses, Gladioli, etc. Send for list.

**Specimen Grounds, 702 PIONEER AVENUE, EAST  
A. LINGHAM PUYALLUP, WASH**

### FREE CANADIAN HOMESTEADS.

Why pay \$50.00 to be located. We give you full information where the best lands are in Western Canada that are close to railroad and town; name of guide on the ground; full directions to get maps and plats free; how to get homeseekers tickets; everything you need to know and locate yourself all for \$3.00. Remit amount by P. O. money order and we will send you the complete information at once. CANADIAN HOMESTEAD COMPANY, 73 6th STREET, PORTLAND, OREGON. For reference, THE FARM MAGAZINE COMPANY, 411 PANAMA BLDG., PORTLAND, OREGON.

of the house. It is, on a small scale, just such a plant as those which for years have illuminated our largest cities.

No matter how many buildings you wish to light, and regardless of how

many lights you desire in each, there is a plant of the right capacity to fill your particular requirements, with the least possible initial outlay and the lowest operating cost.

Select a plant having sufficient bat-

## Loganberry Plants

We have a full line of Loganberries, Mammoth Blackberries. Also choice grades of nursery stock and will be pleased to have you make your wants known to us. Would like to get in touch with some good live salesmen. Good opportunities. Write for particulars.

Address

**Albany Nurseries, Inc.**

**ALBANY, ORE.**

G. W. Pennebaker, Mgr.



tery capacity to carry the lights desired each night for at least one week. Recharging will then be necessary only once per week, and you can arrange to drive the dynamo for recharging once per week, at the same time the engine is doing other work, such as pumping, grinding, etc., thereby economizing fuel and time.

The operation of an outfit is so simple and easy that many of the equipments are run by young boys and several were installed in the past year, where all the attention necessary is given by the women of the household.

Outfits require very little care. Water should be added to the battery occasionally, and the generator and engine oiled each time that they are run, and if this is done, no repairs will be necessary for many years.

There will be practically no depreciation of your dynamo, which should last as long as the engine with which it is used.

The depreciation of the storage battery will depend upon the treatment it receives. If it is taken care of the positive plates will probably have to be renewed in five or six years and the negative in ten or eleven years. This means that the average cost of maintenance of your battery and dynamo should not exceed seven or eight dollars per year.

The total cost of operation and maintenance of a good farmhouse lighting outfit will be found through actual practice to be much lower than that of any gasoline or acetylene gas system.

#### FLIES DESTROYED WITH BORAX.

**Directions for Treating Manure with Borax to Kill Fly Eggs and Maggots.**

By Messrs. Cook, Hutchinson and Scales, in Bulletin 118, U. S. Department of Agriculture.

Apply 0.62 pound borax or 0.75 pound calcined colemanite to every 10 cubic feet (8 bushels) of manure immediately on its removal from the barn. Apply the borax particularly around the outer edges of the pile with a flour sifter or any fine sieve, and sprinkle 2 or 3 gallons of water over the borax-treated manure.

The reason for applying the borax to the fresh manure immediately after its removal from the stable is that the flies lay their eggs on the fresh manure, and borax, when it comes in contact with the eggs, prevents their hatching. As the maggots congregate at the outer edges of the pile, most of the borax should be applied there. The treatment should be repeated with each addition of fresh manure, but when the manure is kept in closed boxes less frequent applications will be sufficient. Where the calcined colemanite is available, it may be used at the rate of 0.75 pound per 10 cubic feet of manure, and is a cheaper means of killing the maggots. In addition to the application of borax to horse manure to kill fly larvae, it may be applied in the same proportion to other manures, as well as to refuse and garbage. Borax may also be applied to floors and crevices in barns, stables, markets, etc., as well as to street sweepings, and water should be added as in the treatment of horse manure. After estimating the amount of material to be treated and weighing the necessary amount of borax a

measure may be used which will hold the proper amount, thus avoiding subsequent weighings.

#### Advantages and Cost of Borax.

The great demand for borax, due to its uses in the arts and in the household, has made this substance available in all parts of the country. It has the further advantage of being comparatively nontoxic, noninflammable, and easily transported and handled, as it is a powder. Thus borax is superior to most of the substances that have been tested as larvicides. Several investigators (see Haselhoff, 1913) have shown that in small amounts borax has a stimulating effect on plant growth, while larger amounts are toxic.

Borax is prepared from colemanite (calcium borate), which is mined in California, and has the following composition: Boron trioxid, 50.9 per cent; calcium oxid, 27.2 per cent; water, 21.9 per cent. The crude colemanite was tested for its larvical action, but this was so slight, undoubtedly due to its insolubility, that it was discarded in favor of borax and calcined colemanite. Calcined colemanite is prepared from crude colemanite by simply subjecting it to high temperature.

The crude colemanite is not sold as such, but a considerable amount of the calcined colemanite is used in various industries. The calcined colemanite is a gray powder and is largely, but not entirely, insoluble in water. It costs about 2 cents per pound in large shipments, and in smaller amounts sells at approximately 4 cents per pound. Borax ( $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ ) as prepared from colemanite by treatment with soda ash. It retails at about 10 cents per pound, but can be obtained in 100-pound lots or more in Washington at 5 to 6 cents per pound. Borax is readily soluble in water.

#### New Yorker's at Farming.

The State of New York has laid its hands on the plow so to speak. Governor Glynn looking over the State saw the many abandoned farms, the large list being offered at "begging" prices and the hundred million dollars of farm mortgages in that State absorbing high rates of interest. Nearly a quarter million dollars worth of tubercular cows were destroyed and he concluded that before the farming industry was entirely wiped out it was time for action. At his instigation the legislature appropriated funds so the State will pay for the tubercular stock destroyed, and if the bill is not settled within 30 days the farmer sustaining loss may also recover interest.

A law was also enacted providing for assistance in the marketing of produce or in other words to shorten the channel between producer and consumer. In his speech at a Hop growers picnic Governor Glynn stated:

"To meet this situation the State has created a Department of Foods and Markets with broad duties and extensive powers. This department will supervise all places where farm produce is sold. It will investigate all food products and marketing in all its phases. It will advise and assist in the location and establishment of local markets. It will regulate the grading, handling and storage of all food products. It will provide licensed and responsible auctioneers



## Watch for the Sign RED CROWN the Gasoline of Quality

Wherever you see the Red Crown sign you can buy an honest, reliable gasoline—the uniform—quick acting—clean burning kind that gives you full power—that costs you least *per mile*. Red Crown is not a "mixture," but a straight distilled, refinery gasoline—the best the Standard Oil Company can make. In gasoline, it is economy to buy the best.

Red Crown signs are furnished to all dealers handling Red Crown Gasoline. Watch for the Sign or ask our nearest agency about delivery in bulk.

**Standard Oil Company**  
(CALIFORNIA)

## Milton Nursery Co.

A. MILLER & SONS, INC.—MILTON, OREGON

### Pear, Cherry, Apple, Prune and Peach Full Line Shade and Ornamental Stock

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

Salesmen wanted.

A Catalog and Special  
Prices on Request.

### Producers & Consumers Co-Operative Company

E. HAZELTON, Pres. & Mgr.  
1114-1116 Western Ave., Seattle, Wash. Tel. Main 3689.  
(1400 Farmers in our Membership)

We handle all kinds of farm products, making channels between producer and consumer as short and inexpensive as possible. If not a stockholder, write for our prospectus, also our wholesale provision list. State what you have to offer in fruit, potatoes, veal, pork and poultry. Please mention this paper.

## Hardware for Farmers' Buildings

When building your barn, house or other structures it is your privilege to get the lowest cash figure and the highest specific quality. The natural question is WHERE? The answer MOHR HAS IT. Write for prices. Uncle Sam serves you.

**Henry Mohr Hardware Co.**

1141-43 C Street  
Tacoma, Wash.



to operate to these markets. It will publish a daily bulletin to every farmer, which will keep him posted on current prices and the markets of best demand. It will have facilities for assisting in the formation of co-operative societies among farmers as well as among consumers, and finally, it is required to report annually to the Legislature upon the work done and recommend whatever agricultural legislation appears most necessary."

#### Land Bank for Farmers' Needs.

"Profiting by the experience of the European farmer, New York has placed upon its statute books a law providing for the creation of a land bank fashioned on the principle of European land banks, but operating through the distinctly American institution of saving and loan associations. This land bank will save the farmers of New York \$24,000,000 if present mortgages are converted into ten-year amortization loans, and \$82,000,000 if converted into fifty-year amortization loans.

By amortization loans, I mean that system of loans now used in Europe under which the European farmer pays a small sum each year upon the principal in addition to his interest, and by continuing these small payments for periods ranging from ten to fifty years, is able to pay off the principal of his loan with little difficulty. Instead of having a large indebtedness to meet at the maturity of his loan and running the risk of foreclosure, through hard times or failure of crops, he pays in installments and has no greater burden to bear at the end than at the beginning of his loan.

Under our present system the American farmer pays \$600 interest on a ten year loan of \$1,000 at six per cent. and the principal at the end of the term, or sixteen hundred dollars in all. For the same loan on the amountization plan, he would only pay \$135.86 each year, or \$1,358.60 altogether. For the same loan for fifty years on the amortization plan the farmer would pay \$63.44 annually, or only \$3.44 over the interest, but this small additional sum is enough to wipe out the principal. This is the credit system which the land bank will give to the farmers of New York. Europe has had it for fifty years. Our Federal Government has talked of establishing it for ten years. But while Uncle Sam has talked, New York has acted, and New York is the first State in the Union to provide its farmers with modern credit facilities.

After New York had passed its agricultural legislation, I asked the Legislature for an appropriation to carry these laws to the farmer. In addition to the Land Bank Law and the Food and Market Law, we had laws upon the statute books providing for credit unions and co-operative farming societies. Because I wanted to see the Land Bank understood, because I wanted to see these co-operative societies formed, I desired to send a corps of energetic organizers into the farming communities of the State to explain the workings of these laws and to organize the societies. The Legislature readily responded to this appeal, and as a result, a campaign of organization and education, financed by the State, is now making rapid progress. Other states, particularly Washington and

others on the Pacific Coast will watch with interest the result of New York's efforts at farming. Particularly is the land bank credit system and the scheme for co-operative marketing of interest to our readers.

#### HOW FARMERS BUY AND SELL.

Farmers generally receive the lowest price that their produce is ever sold for, and pay the highest prices that their supplies ever command. This condition, according to economists at the Oregon Agricultural College, is but one of the evils of the present system of unorganized marketing. While it is natural that produce prices should raise as they travel from the producer, it is very burdensome when between producer and consumer the channel absorbs, as at present, from 50 to 60 per cent. of the cost to the consumer. Since nearly all the added cost is a result of wasteful methods of city distribution, consumers as well as producer should organize to eliminate the waste. High prices charged to farmers are caused in part by the extravagant methods of city retail trade, since farmers pay a share of the small phone order, immediate delivery and other expenses although getting none of its benefits.

#### SILAGE AND OTHER SUCCULLENCE COMPARED.

"The relative value of roots, kale and silage—the usual sources of succulence for winter feeding—depends upon their composition, comparative feeding values, cost of production, keeping qualities and convenience of feeding," says Professor R. R. Graves, head of the Dairy department, Agricultural College, Corvallis, Ore.

"The total digestible nutrients in one ton of corn silage is 326 pounds. In a ton of red clover silage the total is 224 pounds, but the nutritive ratio is 1 to 6.9, while in corn it is 1 to 11. The digestible nutrients in a ton of sugar beets is 224 pounds, with a ratio of 1 to 8.5. In rutabagas the total is 186 pounds to the ton, with a ratio the same as that of sugar beets. The digestible nutrients in a ton of kale are but 139 pounds, while the ratio is very narrow—1 to 2.8. It is also true that the nutrients of apple pomace silage are pretty high, about 216 pounds to the ton. Their nutritive ratio is the widest of any of the common winter succulents, being 1 to 15.3.

"The corn and clover silage contain the greatest percentage of dry matter, while kale and some of the roots contain 90 per cent water. One ton of corn silage contains as much digestible nutrients as a ton and a half of sugar beets, 1.8 tons rutabagas or carrots, and 2.3 tons of kale."

#### Twelve Good Reasons for Using Ensilage.

1. Every ration needs some succulent feed.
2. Corn silage is probably the cheapest succulent feed that can be had.
3. An acre of corn can be placed in the silo at less cost than that of harvesting an acre of roots or kale.
4. A ton of corn silage contains more nutrients than a ton of roots or kale.
5. Silage can be made in weather that is unfit for making hay, since the crop is never too wet to put into

## SIXTH ANNUAL Southwest Washington FAIR CENTRALIA-CHEHALIS

August 24-29, 1914

The opening Fair of the circuit; bigger and better in all departments this season.

Liberal purses and a first-class track for the horsemen. Purses paid every evening.

We invite the stockmen and will do all in our power to please you. Our policy, prompt payment of premiums.

Poultry exhibitors will be given all possible attention to their birds.

All other departments will be unexcelled in their exhibits.

There will also be a Better Babies Department at the Fair this year.

Amusement will be in abundance. The great Patterson's Shows in which they carry a large number of trained animals will be a strong feature.

For premium lists and further information write or see

G. R. WALKER, Secretary,  
Chehalis Washington

## NORTHERN PACIFIC RY. Is selling daily to September 30 EXCURSION TICKETS EAST

Low fare to any Eastern point. Stop-overs given. Return up to Oct. 31.

Daily Through Trains  
From Pacific Northwest  
TWO TO CHICAGO via MINNEAPOLIS-ST. PAUL  
ONE TO ST. LOUIS

Our usual high class service, with Northern Pacific Superior Dining Service.

Yellowstone Park  
Season to September 15



Tickets and all information  
C. B. Foster, City Pass. Agt.  
925 Pacific Av., Tacoma, Wn.  
A. D. Charlton, A. G. P. A.,  
Portland, Oregon

**Turner & Pease Co., Inc.**  
813-815-817 Western Ave., Seattle  
Leading Manufacturers of Butter in the State  
We pay cash for butter fat and eggs at correct market prices.

#### NURSERY CATALOG FREE

Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,

J. B. PILKINGTON, Nurseryman  
Portland, Ore.

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are sold by

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## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously  
YOUR FRUIT, POULTRY AND EGGS

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation

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SPOKANE, WASH.

## Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
DURC JERSEY SWINE  
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Goods handled strictly on commission. Prompt returns our specialty.

Wire or write us at any time for market quotations. References: National Bank of Commerce, Seattle; Merc. Agencies; Shippers on Pacific Coast.

WE CAN SELL YOUR GOODS



a silo.

6. Many crops will be saved and utilized for feed that would otherwise have been a total loss because of unfavorable weather for handling the crop as hay.

7. More feed can be stored in a given space in the form of silage than in that of hay or fodder.

8. A well filled silo is a guarantee against shrinkage of milk when pastures dry up.

9. Silage can be used for supplementing pastures more economically than soiling crops, because less labor is required and the feed is more palatable.

10. More stock can be kept on a given area of land when silage is the basis of the ration.

11. Silage has a beneficial effect on the digestive organs.

12. With the silo full a good, palatable feed is always on hand regardless of how bad the weather is or how busy men and teams are at field work.

#### FARMING STANDARDIZED THRU AGRICULTURAL EDUCATION.

The following extract from a recent letter from a Western engineer in the Reclamation Record, gives the view point of a professional man regarding the condition of agriculture in America.

"In our profession as engineers we experience but little trouble in carrying out our construction plans because our assistants have all been trained in an exact science, laws governing which have been proven and are recognized by the whole profession. The problem seems to settle itself into one of education. Until we have a professional farmer, one who is educated to the exact profession of farming, the problems of your Service and the rural life of America will not be solved. Farming all over this country has been a hap-hazard business. Men plow the ground, plant their seeds and trust to Providence. They do not know why they do not succeed. All they know is that they do not; and to ease their own conscience they blame the weather or

something else. On irrigation projects it is the Ditch Company or the Reclamation Service, as the case may be.

"I have just returned from a trip through the East. I know of nothing that will make a thoughtful man sadder than the contemplation of the abandoned farms in some of the Eastern states. There is as great a work in the reclamation of worn out lands of the Atlantic coast and Southern states as there is in the irrigation of Western lands. Neither can be successfully accomplished except through standardizing farming and educating the farmer to the standard."

#### EIGHT HOUR LAW

In the response to inquiries sent to a number of our readers, viz.: As a farmer, are you in favor of a general 8-hour law, the following replies indicates some of their views:

L. V. B., Chehalis—No. Too expensive, farm work can't be done at some seasons of the year on an 8-hour basis. More silos are needed here.

J. M., Chehalis—No. Because I work 15 hours a day at farming and dairying and then find it difficult to make any margin over taxes and a living. I had 18 acres of land assessed at \$5 per acre. It was cleared at a cost of over \$100 per acre, and was then taxed at \$35 per acre before a crop was grown. Such method I consider outrageous.

H. W. A. T., Chehalis—Not in favor of an 8-hour law because on a dairy farm like mine it would require 2 shifts of help and no farm would stand that. If the wage is lowered then help is not available and to farm with just the owner is neither profitable nor desirable.

A larger cash market for the products of our farms is in my opinion a most essential feature for the people of this district.

L. R. J., Chehalis—Yes, I am in favor of an 8-hour law but I have to work 16 hours on the farm. I am going to leave it and let the Grange do the farming. I am of the opinion they need an evangelist.

## IRRIGATION

Adequate, available moisture at all seasons.

#### IRRIGATION, IT'S BROAD MEANING

Converting deserts into fruitful areas is only a part of the mission of irrigation. To increase general production, by supplementing rainfall and making agriculture more profitable is its wider scope.

The fact that irrigation can be, and indeed often is, called into service in districts which have an ordinary rainfall, establishes that irrigation does not take the place of natural precipitation, but rather helps it. Irrigation farming is a movement in advance on farming by rainfall. The farmer in a rainy country may suffer fully as much because it rains too copiously at the wrong time, as he does because it does not rain when his crops need moisture. It might almost be said that there are no two plants which require exactly the same quantity of moisture at exactly the same stage of growth.

In the coast section of Washington are thousands of acres of fertile valley lands where the forage, fruit or

garden crops could be doubled by a judicious use of water available from the foot hill streams and now going to waste. In numerous cases underground piping has been done and by means of whirligig sprinklers the crops have been greatly increased. This method of irrigation will be more generally employed during the months of July and August throughout western Washington in the future.

Under irrigation, the exact degree of moisture can be applied to suit any crop. The very color and texture of fruits and vegetables can be regulated. The plants can be kept growing until they have attained their maximum development, and then, with the water shut off, can be ripened quickly. For instance, onions cultivated in this way have the most perfect keeping qualities; while potatoes which are kept always evenly moist are smooth and free from second growths. Irrigation farming is the only system that ordinarily permits of the intelligent treatment of every individual crop.

Irrigation is beneficial to any coun-

# Satisfaction

is what we are all striving for. You can get it with a

## Hocking Valley Ensilage Cutter

with Blower or Carrier Elevator.

Will fill the highest silo with the least amount of power. The Blower Cutter has the knives and the fan blades on the balance wheel. It will not clog in the blower pipe, the gears will not break and the straight knives are easily sharpened and quickly adjusted.

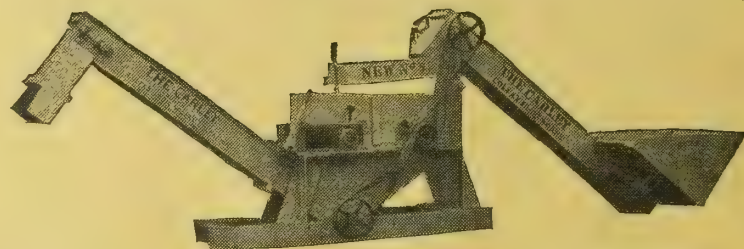
Let us figure with you on your ensilage proposition.

Catalogue mailed on request.

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Feed Mill**  
In Seven  
Sizes  
THE LATEST AND BEST MILL ON  
THE MARKET TODAY

Send for Catalog  
Manufactured only by  
**Colfax Iron Works, Inc.**  
Colfax, Wash.  
Successors to CARLEY BROTHERS

## Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station, \$1.96½ gave \$22.11—over 1000%. At Ohio station each dollar paid for itself and gave \$5.63 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

**UNITED STATES PHOSPHATE CO., Salt Lake City, Utah**

Write for literature.  
"Perfection of fineness in grinding," our motto.



**DE KOVEN** A SCHOOL FOR BOYS

Ideally located on picturesque Steilacoom lake. A homelike and healthful school.  
**TRAINS FOR LEADERSHIP**  
To give each boy individual attention, only a limited number admitted. Upper school prepares for Colleges and Technical Schools. Lower school for younger boys. Our 23rd school year opens Sept. 17. Write now for our illustrated catalog.  
D. S. PULFORD, A. M., J. R. EDEN, A. B., Principals  
P. O. Address: South Tacoma, Wash.



try because it promotes intensified methods of farming. In a given area it can be made to produce even ten per cent. more than it could by the ordinary methods; then everyone share in greatly increased prosperity. Firstly, the cultivator himself obtains bigger returns per acre, with a correspondingly bigger income. More labor is required on the land. Closer settlement is caused—in fact, irrigation and the "syndicate farm" are not compatible. The basis of agricultural prosperity is the small farm worked by, and supporting, the large family; and this is what irrigation tends to strengthen. With a large number of people working on the land, all with a larger spending capacity, there would be a greater circulation of money and an increased traffic in merchandise of every description, affecting not only the small country points which came into direct contact with the agricultural producer, but also the large centres from which supplies were obtained; and thus the good results would be like a snowball, getting bigger and bigger as it went. Irrigation can do these things; and not on a ten per cent. basis, but on a twentyfive, fifty or hundred per cent. increase.

The modern farmer figures how best to make water serve in his operations for grain and for home comforts and then gradually is making his plans effective.

#### IRRIGATION AND MANURING CORN

The following comments are from the Summary of Bulletin 133, recently published by the Utah Agricultural Experiment station, Logan, Utah.

The proper use of water is the important question in agriculture, and the consistent use of manure is necessary to the establishment of a permanent agriculture in any country.

The highest yields of corn to the acre of land was produced where from fifteen to thirty inches of water were applied.

Where forty acre-inches of water were applied there was a decrease in the yield of corn, a waste of water, a loss of time in applying the unnecessary water, and injury to the soil, hence the wise farmer will avoid the excessive use of water.

Manure gave sufficient increase in yield of corn to make it worth about \$2 a ton.

The time of maturity of corn was delayed by irrigation, but hastened by manure. This is important since earliness in maturity of corn is very desirable.

The germination of corn was most rapid and complete in a soil containing a medium amount of soil moisture.

#### FIELD SERVICE FOR IRRIGATION PROJECTS.

Congress has made available for field work on Reclamation service an annual appropriation of \$40,000 to be expended through the Department of Agriculture, without entailing any direct charge against water users. Mr. F. D. Farrell, one of the most capable leaders in the Department, has been given charge of this service which is to be carried on in co-operation with the work under the supervisor of irrigation. Mr. Farrell will perhaps start by assigning about 15 of the

project field men for personal work.

In case of special required help in any line, such as dairying, soil studies, hog cholera, etc., the field men assigned to the project will be given assistance by trained specialists and will be backed up by the Department of Agriculture as a whole. This is a most practical arrangement, and it assures each project to which a field man is assigned of the constant service and assistance of trained agricultural men and, in addition thereto, direct touch with the immense resources of the entire Department of Agriculture.

Mr. I. D. O'Donnell, supervisor of irrigation, urges co-operation from the start.

Place before these field men, he says, the difficulties connected with your farming and keep them informed of your success in overcoming special difficulties in order that the ideas you have put into practice may be passed on to your neighbors.

"In many instances during my trips over projects," says Mr. O'Donnell in Reclamation Record, "I have met with farmers who were up against difficulties which could not be explained away on the moment, and yet before leaving the same project I found farmers who had overcome the same difficulties. I have found conditions of soil peculiar to certain localities, and to make the maximum returns possible from such soil requires careful study under local conditions. On every project there are men who have studied out for themselves the best methods of dairying, cattle feeding or hog raising, and yet their methods are not known to their neighbors. If the field man does nothing more than carry good ideas from farmer to farmer, the projects will be greatly helped, yet this is only the beginning of the good that may be accomplished.

"Mr. Farrell is now perfecting his plans for this field work, and it is expected that the good work will soon be under way.

"The more you benefit from the advantages offered you by the Department of Agriculture, the more that Department will be willing to assist you."

#### GATE STRUCTURES FOR IRRIGATING CANALS.

Most of the gate structures in American irrigation canals a few years ago were of wood, but more recently concrete, both plain and reinforced, has come into common use. Wood has the advantage of cheapness and of easy handling and the disadvantage of rapid depreciation, while concrete which has the advantage of permanence is more costly. The kind of material used, as well as other features of gate structures, varies in different irrigated regions of the West. One section often uses features especially adapted to it of which other sections, that could use them equally well, are ignorant. The U. S. Department of Agriculture is endeavoring to bring together such designs for gate structures as are adapted to many localities so that each locality may profit by the practices of others, and has just issued a new bulletin (No. 115) entitled "Gate Structures for Irrigation Canals," intended to be of assistance to engineers and others with technical knowledge of the subject.

## Pumps and Pumping Plants Complete

Write us about Pneumatic Water System. Positive satisfaction is the reputation we maintain.

CLOVER AND VETCH SEED FOR SEPTEMBER SOWING

## Poole's Seed & Implement Co.

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## Vulcan Stumping Powder

The best powder for stump blasting purposes. Low freezing. Made on Puget Sound for more than six years and is giving excellent satisfaction to thousands of users. Plain directions with every case. If you can't get VULCAN STUMPING POWDER from your dealer write us. We also sell direct. Please mention this paper.

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ALL TIRES SOLD AT WHOLESALE PRICES

Here are a few bargains in used cars. Ask for special prices on others and on trucks.

One 1912 Chalmers, 5-passenger, self-starter—\$975.

One Franklin, 5-passenger, in A1 condition, guaranteed—\$800.

One Franklin, 5-passenger, guaranteed—\$750.

One 3-passenger Ford—\$250.

One 1912 Cadillac, electric lights and self-starter—\$1,000.

The above cars are guaranteed to be just as represented by us.

Terms if desired.

OVERLAND - PACKARD - HUDSON New cars and supplies complete always on hand.

## Pacific Car Co.

REMEMBER THIS IS THE HOUSE OF SERVICE

North Second and G Streets  
(Point Defiance car line)

TACOMA, WASH.

## Keeps The Motor Cool

Zerolene, as its name implies, keeps the motor cool by perfect lubrication. Even under intense heat and pressure it maintains the desired lubricating film between the wearing surfaces and so enables the engine to do its work efficiently.

## ZEROLENE

THE STANDARD OIL  
FOR MOTOR CARS

is the best auto oil the Standard Oil Company can make—produced by experts of long experience who have studied the requirements of motor lubrication and who have at their command selected crudes and the best refinery equipment with which to produce an oil exactly adapted to meet these requirements.

Dealers everywhere. Ask our nearest agency about delivery in bulk.

## Standard Oil Company

(CALIFORNIA)



Please mention this paper



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. TOWNSEND

### WAITING.

Serene, I fold my hands and wait,  
Nor care for wind, or tide, or sea;  
I rave no more 'gainst time or fate,  
For lo! my own shall come to me.

I stay my haste, I make delays,  
For what avails this eager pace?  
I stand amid the eternal ways,  
And what is mine shall know my face.

Asleep, awake, by night or day,  
The friends I seek are seeking me;  
No wind can drive my bark astray,  
Nor change the tides of destiny.

What matter if I stand alone?  
I wait with joy the coming years;  
My heart shall reap where it has sown,  
And garner up its fruit of tears.

The waters know their own and draw  
The brook that springs in yonder height;

So flows the good with equal law  
Unto the soul of pure delight.

The stars come nightly to the sky;  
The tidal wave unto the sea;  
Nor time nor space, nor deep nor high,  
Can keep my own away from me.  
—John Burroughs.

### POLLUTED WATER

Two Simple Tests by Which Its Impurity May Be Noted.

Everyone knows and admits the necessity for pure water. When you are away from home and are not sure of the character of the water supply it would not be a bad idea to make a few simple tests. The results may prove that it was decidedly worth while to take the trouble, says the New York Sun. Here are two tests that you can make very easily:

Fill a tumbler with water, drop in a lump of white sugar, cover it with a saucer and let it stand overnight on the bricks at the side of the range, on the kitchen mantelpiece, or, in fact, anywhere where the temperature will not sink below 60 degrees. If next morning the contents are clear the water is pure. If, on the other hand, the liquid is cloudy some source of contamination is indisputably proved.

The second test is to drop a few grains of permanganate of potash into a tumbler of water, cover and let it stand for an hour. If the water is still of the bright rosy color to which the chemical turned it, it is perfectly safe for drinking. If it is of a brownish color it is impure, although the impurity may be of the kind that boiling will rob of its power to harm.

### CHEER UP.

It's the best advice for the woman to follow if she is sincere in her effort to lose years and gain dimples. There may be a sad, sullen, somber beauty, but it's not the kind worth working for nor the kind one wants to look at day in and day out, summer and winter, in sickness and in health, till the final parting, says a writer in Farm and Fireside..

The woman we love is the woman

with the sunshiny heart. And she's the woman we think of when someone speaks about the various types of modern beauty. Perfect features, rose leaf complexions, may last for a time as the cover for a snarly nature. But when they vanish the unmasking is complete.

The free indulgence in emotions may be all very "temperamental." It may seem to be the hallmark of genius. It may distinguish you from your companions and make them treat you a bit different, catering to your whims, which is very flattering. But—it is the quickest and most complete way of destroying health, happiness and good looks that you can find.

One fit of anger means one year of age added to your life.

One hour of jealousy means one month of caring and massag and cold creaming before the marks are entirely gone.

### THE BEST MEDICINE.

Many of the most familiar fruits and vegetables have distinct medicinal values. The proper attention to the things we eat, then, will make them serve both the purposes of food and medicine, and will enable us to save some of the money spent on remedies and doctor bills. The following are some articles of diet which are known to have medicinal qualities, according to Kansas City Star:

Apples, carrots and Brazil nuts are excellent for sufferers from constipation.

Asparagus stimulates the kidneys.

Bananas are beneficial to sufferers from chest complaints.

Beets are fattening and good for people who want to put on flesh. So are potatoes.

Celery and onions are nerve tonics.

Cranberries are astringent and correct the liver when it is suffering from inaction caused by overeating.

Dates are nourishing and also prevent constipation.

Grape juice is a laxative, but the skin and seeds are likely to cause constipation.

Honey is a good substitute for cod liver oil.

Lemon juice is excellent as a gargle for sore throat.

Lettuce has a soothing effect on the nerves and is excellent for sufferers from insomnia.

Onions are conducive to sleep. They quiet the nerves and are good for colds.

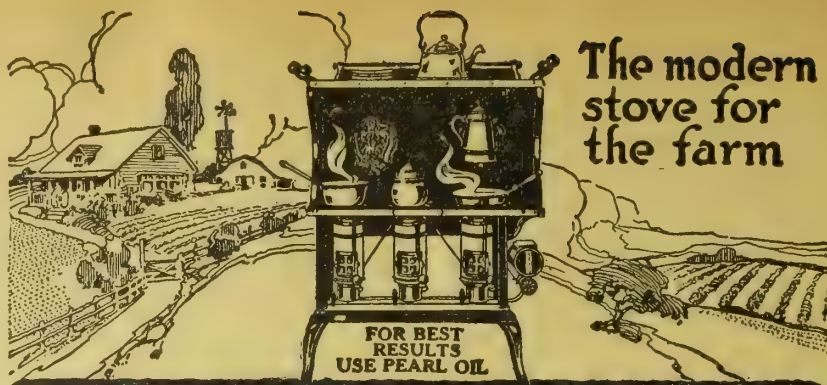
Parsnips, like sarsaparilla, are good for the blood and to tone up the system.

Tomatoes are good for a torpid liver, but they should be avoided by gouty people.

Water cress is an excellent blood purifier.

### SLEEP ESSENTIAL.

Sleep is the greatest restorer. It gives the body a chance to get rid of the fatigue poisons and to make necessary repairs. Lack of sleep will kill more quickly than lack of food. A sleepless animal, Professor Harris says, is as miserable at the end



The modern stove for the farm

A good oil stove cooks just as well as a wood or coal range—and does it quicker and cheaper. It saves your time and strength—for there's no wood, coal or ashes to lug. The

## New Perfection OIL COOK STOVE

burns kerosene—the clean, cheap, easily-handled fuel. Its blue flame gives an intense heat and you can regulate it to any degree you want—just like a gas range. It doesn't smoke—nor taint the food. An ideal summer stove because it doesn't over-heat the kitchen. Many use it the year 'round. Dealers everywhere.

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## Headquarters for OREGON CHAMPION GOOSEBERRY

and Perfection Currant

Attractive prices made now for Advance Orders

Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear. Correspondence solicited.

## Portland Wholesale Nursery Co.

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The Place to Buy your Supplies

## Live Stock Market

Send for our quotations on cattle, hogs, sheep, poultry and hides. We buy stock cattle.

Try the parcel post service for our meats; anything in the packed line.

Occasionally we have some good dairy cows. Write, giving particulars.

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## COPPER ORE PAINT

For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00. Write for prices on quantities.

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## Clover, Timothy and Vetch Seed

Strictly high grade both in purity and vitality in actual tests. Ready for early September sowing. Please submit estimate requirements. Now is a good time to plant more thousand headed Kale in the Coast section. 50c per pound, post paid.

AABLING-EBRIGHT SEED CO.

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of three or four days as a starved one at the end of ten or fifteen. Indeed, sleep to a degree will take the place of food. People who sleep past breakfast often are not hungry until the middle of the day.

It takes some seven to eight hours of sleep for adults to permit the system to scour out the clogging poisons. To skimp on necessary sleep is as bad for efficiency as it would be to allow grit to accumulate in the bearings of an engine—and for the same mechanical reasons.

#### YEAST IN BREAD MAKING.

"Home made yeast is much better than dry yeast in making bread, says Dean Henrietta W. Calvin of the Home Economics department, O. A. C. "It may be likened to the seed saved by a good gardener from his own healthy and vigorous plants. When thus prepared it contains many millions of live growing plants of microscopic size. The liquid yeast can be kept in a cool, dark place about two weeks. Sugar is a good yeast food. A little added to the bread does not affect the flavor of the bread, but it does quicken the action of the yeast. Salt is used for flavor. The small quantities in which it is used in bread does not retard the growth of the yeast plants but it adds to the whiteness of the bread. The

5. What does the father administer punishment with? Golden rod.
6. What does the brother do then? Balsam.
7. What is her father's name and office in the Presbyterian church? Elderberry.
8. What is her sister's name and the color of her eyes? Black-eyed Susan.
9. What is her lover's name and what does he write with? Jonquil.
10. What does her lover often lose? Batchelor's buttons.
11. What flower does she give him? Heartsease.
12. What candy did he give her? Candytuft.
13. What did he do when he popped the question? Aster.
14. What did she say when he knelt before her? Johnny jump up.
15. To whom did she refer him? Poppy.
16. What flowers did he wish to press? Tulips.
17. What flower was lacking on a cloudy day? Sunflower.
18. What flower did they look at in the evening? Moonflower.
19. Who married them? Jack in the pulpit.
20. In what city did they live and what was her position in society? Baltimore belle.
21. What was she when she went



Master Paul Dahlia, one of the new popular varieties grown by O. J. Wingren, La Crosse, Wash.

bacteria that cause sourness are developed when the bread is kept too warm. Bread that feels warm to the hand is too warm to make sweet, light and well flavored bread."

#### A FLOWER COURTSHIP.

There are many flower courtships, but here is one that may be new to you. It was new to the guests at a porch party where the decorations consisted in garden flowers, where nasturtium sandwiches and flower-decked salad were served, and where the prizes for the various winners in the guessing contests were lovely bunches of flowers from the hostess' garden.

The answers to the questions are all flowers. Here are the questions:

1. What is the maiden's name and the color of her hair? Marigold.
2. Who is her favorite brother? Sweet William.
3. What does her brother like to do in winter? Snowball.
4. At what hour does her brother wake her father? Four o'clock.

West? Prairie queen.

22. What chimes rang out when they were visiting an English cathedral? Canterbury bells.

23. What feeling did they share when they were in London? London pride.

24. What did they feel when they went walking in a London fog? Love in a mist.—Ex.

#### TRAINING ANOTHER'S CHILD.

They all sat 'round in friendly chat  
Discussing mostly this and that,  
And a hat.

Until a neighbor's wayward lad  
Was seen to act in ways quite bad;  
Oh, 'twas sad!

One thought she knew what must be done  
With every child beneath the sun—  
She had none.

And ere her yarn had been quite spun  
Another's theories were begun—  
She had one.

## EXHIBIT

YOUR LIVE STOCK AT THE

# Western Washington Fair PUYALLUP

Sept. 29-30 and Oct. 1-2-3-4, 1914

Again Using the Old Slogans:

"Bigger and Better and the Fair That Makes Good"

The Live Stock, Horticultural, Machinery and Educational Exhibits will be Grand. 750,000 People Within a Radius of 50 Miles. Attendance 1913, 60,000. Send for Premium List.

W. H. PAULHAMUS  
President

J. P. NEVINS  
Secretary

PUYALLUP, WASH.



## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

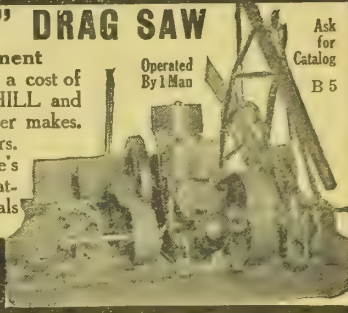
## \$82 A WEEK EARNING CAPACITY

### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment  
Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

Reierson Machinery Co.

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## NORTHWEST GROCERY CO.

HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

Northwest Grocery Co.

13th and Commerce Sts.,  
Tacoma, Wash.

Oldest and Largest Mail Order  
House in the State.

## In Color and Flavor

both—to please the eye as  
well as the palate—

### Mapleine

is unique. It is particularly  
appropriate at this season for  
making maple cakes, des-  
serts, ices and dainties.

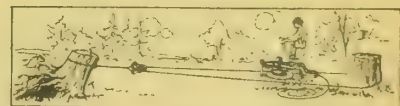
Adds zest and color to  
meat gravies, soups, etc.

Your grocer sells it.

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## SAMSON STUMP PULLER



PRICE \$67.50

The only REAL HAND POWER  
MACHINE MADE. A boy can pull  
more than a team. Our Booklet  
No. 2 tells all about the SAMSON  
and shows pictures of the ma-  
chine at work. Sent FREE. Write  
for it.

SAMSON MANUFACTURING CO.  
112 Western Ave. Seattle, Wn.

**WANTED** — Family to live on a farm. Man must be first-class milker and dairyman, and wife a good cook; must have at least two children of school age, boys preferred. Wife may board other help on the farm. House rent free, unfurnished, running water in house. Write for particulars. W. T. Putnam, Lake Cushman, Wash.

## THE ANNIE WRIGHT SEMINARY

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Thirty-first Year

An endowed Church School for Girls, College Preparatory and General Courses. Certificate admits to Smith, Wellesley, Vassar and the leading State Universities. Special advantages in Domestic Science, Music and Art.

ADELAIDE PRESTON  
Principal



The third was not so sure she knew,  
But thus and so she thought she'd  
do—

She had two.

The next one added, "Let me see,  
These things work out so differently."  
She had three.

The fifth drew on her wisdom store  
And said, "I'd have to think it o'er."  
She had four.

And then one sighed, "I don't con-  
trive  
Fixed rules for boys, they're too much  
alive."  
She had five.

"I know it leaves one in a fix,  
This straightening of crooked sticks."  
She had six.

And one declared, "There's no rule  
given,  
But do your best and trust to heav'n."  
She had sev'n.  
—Selected.

#### EGG ALBUMEN IN BAKING POWDER.

The attempt to discredit the use of white of egg as an ingredient in baking powder seems to have been originally planned and conducted very largely by the baking powder manufacturers who do not use this ingredient.

Egg albumen has been used in the manufacture of baking powder for fully forty years by various baking powder manufacturers. Every objection raised against its use in baking powder can be traced directly to manufacturers who for selfish purposes to save the slight increase in the cost of production have hoped to bar the use of a wholesome product, which serves several valuable purposes, an important one being that of retaining the gas when the baking powder comes in contact with moisture. Practical methods of baking all require the addition of moisture to the baking powder, in connection with the flour and other companion ingredients, before it is subjected to any temperature in the oven. It is highly desir-

able that as little as possible of the leavening power of the baking powder be lost before the baking goes into the oven. Egg albumen has a tendency to retard the action of the baking powder in the dough before it is subjected to the oven heat.

Some manufacturers have been prompted to make a still wider misstatement to the effect that the addition of egg albumen makes a baking powder appear much stronger than it really is. This is such a gross misstatement that it has not been credited by thinking people. The mix can rise in the glass no higher than it is driven by the gas produced by the powder.

By means of this ingredient, it is possible through a simple test, to determine the amount of available leavening gas present in the goods on the merchants' shelves. Consequently manufacturers using egg albumen are able to extend to every dealer a guarantee to keep his stock of their powder in good condition and up to the standard at all times. This guarantee not only protects the stock of the retailer, but insures to the housewife that she will always secure fresh, dependable baking powder.

Only a minute quantity of egg albumen is required in order to accomplish gas retention, which is admitted by all practical authorities to be just as important as gas production. Egg albumen, even in the small quantities used, adds slightly to the viscosity of the mix, and is especially desirable where the housewife must depend on water rather than milk, for adding moisture to her dough. Egg albumen in baking powder also adds in a small but appreciable degree to the viscosity of dough made from "weak" flour, lacking in the normal quantity of gluten, thereby increasing the tenacious properties so much desired by all good cooks.

The most absurd claim yet in the entire controversy was that the use of white of egg in the manufacture of baking powder constituted an adulteration, which matter was brought up before the Federal Board last November, and after several exhaustive hearings, at which both sides were heard, a decision was rendered by the Federal Food and Drug Board of Inspection that the use of white of egg in baking powder was not adulteration. — Crescent Manufacturing Co., Seattle.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### An Ideal Dairy Farm.

About half a mile west of Kent in the famous fertile White River valley is located an ideal dairy farm of which W. S. V. Robb, Vice President of the Washington State Dairyman's Association is the owner.

The farm consists of 41½ acres of which 25 acres are under cultivation, the balance being brush and timber land affording some pasture.

The crops are principally oats and vetch, seeded in the early fall to be cut in June, put into the silo, and fed during the dry months.

A ten acre crop of corn is growing to yield from 15 to 20 tons per acre of ensilage ready for the silo in October for the winter feed. A crop of clover, orchard and rye grass mixed was seeded last September and produced about 3 tons good hay to the acre and during July there was ample second growth of the clover

for good pasturage or for a second cutting later.

These crops afford an excellent system of rotation. When the ground has been in clover 2 years, it is plowed up and planted with corn. When the corn is cut for ensilage in October, the ground is seeded with gray oats and spring vetch which, the next season is followed with clover and mixed grasses two years. Thus the ground is growing leguminous crops 3 years and corn one year, keeping up splendid fertility in connection with fertilizers obtained from the dairy.

In the herd are 30 cows of which 26 are in good milking condition. These consist of about half of high grade Holsteins, some high grade Guernseys, Jerseys, and one Durham, but are all of excellent dairy type, deep bodied, great feeders and heavy



### Among Imported Guernseys

We offer such cows as Franceska B of Lee Farm, Eva G. and Grace Lee, all above the average leaders each in their class according to age in A. R. records. Imp. Winnie 3rd Cortil du Ray is sired by Masher of King's Lodge, Lady Paget 2nd by Masher Sequel, Duraux Rose 4th and Polly 4th by Clara's Sequel. The young sires Lula's Prince of Arrow Farm, Woodrow and Coquette's Boy, have high records on both sides.

### In Holsteins

We offer 10 pure bred cows and heifers of Hangerveld De Kol breeding, with excellent records back on both sides. Also 5 pure bred bulls; among them Maple Lodge, 2 years old; Sir Hartog Korndyke and Sir Rag Apple Soldine; sires and dams on both sides all A. R. O., with records above 600 lbs. butter. We also offer a fine bunch of high grade young cows.

## FRYAR & COMPANY

Please Mention  
This Paper.

SUMNER, WASH.



## Holsteins Pure Bred and High Grade

Among very choice registered stock we are offering such cows as Helena Pontiac, sired by Pontiac Hercules, producing 70 lbs. milk per day, good for 25 lbs. butter per week. Clothilde Riganeta De Kol Lady, a young cow sired by Madrigal Friend. Her dam Riganeta De Kol 2nd has a record of 76 lbs. milk per day, with 4.01 test. Jessie Cornucopia Pietje No. 201560, 2 years 3 months old, is out of a dam with a record of 18,000 lbs. milk a year, and 21 lbs. butter record per week. Pietje Beauty, 3 years old, has a 14½-lb. butter record at 2 years. These are bred to a 30-lb. record son out of King Segis, and others to a son of King of Pontiacs.

We have some very choice young sires of Homestead De Kol breeding, and high record dams.

OUR HIGH GRADES show excellent breeding, good type, great capacity and are in fine condition.

Numerous selections are being made. Write or make appointment for further particulars.

## VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.  
Please mention this paper

### Electric Light Farm A. J. C. C. Jerseys FOR SALE

Son of Gertie's Brown Lad whose dam has official record of 653 lbs. butter in one year. The dam of this 5-months-old calf made over 10,000 lbs. milk and 595½ lbs. butter with first calf. Solid color, mulberry fawn, priced at \$100.00 for quick sale.

Burt Pease

Ellensburg, Wash.

### Registered Jerseys

Young bulls from heavy producers

For Sale

Also some choice pure bred

Poland China Pigs

Write for prices

E. L. Lloyd

Box 466

Monroe, Wash.





Picnic Luncheon, in the cow barn of W. V. S. Robb, Kent, Wash., where the manufacture of certified milk pays the owner well. Notice the many windows affording good light and ventilation. A high degree of sanitation prevails throughout the plant.

## Lilly's Vetch Clover Grass Seed

### For Fall Planting

These important crops call for careful and studied seed selection. Cheap, inferior seed is expensive at any price. Lilly's best seeds are

### 99% Pure

—and we can furnish all seed tested for purity and germination.

Don't take chances. Buy the best.

We make a specialty of grass and clover seed and stand ready to back up our claims for supplying the best seed possible to get.

Sold through dealers in Lilly's Trade Marked Sacks

### Fall Catalog Ready

Mailed free on request.

THE CHAS. H. LILLY CO., SEATTLE

**FOR REGISTERED DUROC JERSEY**  
bred sows and male pigs, write McK.  
Edwards, Valley, Wash.

producers, the herd averaging about 300 to 400 quarts a day for more than ten months of the year. During July the feed is principally oat and vetch ensilage with a little barley and shorts for concentrate, about one pound fed for each 4 pounds milk.

The barn is thoroughly modern and sanitary, arranged for economical working. There are plenty of windows, raised cement floors with water for flushing the gutters and for washing the cows previous to milking. As an evidence of cleanliness a picnic luncheon was given in this barn recently as shown in the illustration. At one end of the barn is the milk house which contains a laundry room, wash room, sterilizing room, cooling room and an ice and storage room. The cows' udders are kept clipped, and the cows carefully washed with a damp cloth before each milking. The milkers bathe and don clean suits before milking. The milk is poured into the cooling vat from which it percolates over a cooler through which iced brine is pumped by means of a small rotary pump run by electricity, cooling the milk at once, nearly to the freezing point and it is then immediately bottled and sold to the certified milk trade at a very attractive price.

The high grade cows of different breeds produce milk blended, having a proper proportion of butter fat, caseine and a good rich color, but Mr. Robb is careful in the breeding, not to cross any of the dairy breeds.

Steam is generated by means of a 5 horsepower boiler and all the dairy utensils are thoroughly sterilized after each milking by subjecting them to 180 degrees of heated water for half an hour.

Cleanliness is the watchword throughout this plant, nearly all the feed used is produced on the place. It is virtually a manufacturing plant, converting the raw material into certified milk at handsome profit every day of the year.

#### FIFTY GUERNSEY COWS

The last fifty Advanced Register records of Guernsey cows approved and ready for certificates show some inter-

esting figures relative to the records being made by this breed.

Thirty-six out of the fifty gave an average of over 505 lbs. butterfat, showing the standard that many Guernsey breeders are setting for their herds. Four of the number averaged 622 lbs. and two were 713 lbs. each.

To the dairyman who does not aspire to making world records, but wishes to know what he may reasonably expect from Guernsey cows, the foregoing figures are worthy of note. He is proud to know that a Guernsey cow, May Rilma 22761, holds the World's record for butterfat production, with a yield of 1073.41 lbs. butterfat in one year, and perhaps equally pleased to know that he has selected a breed the rank and file of whose cows show such averages.

When he considers further the cost of production and sees that he has received greater returns from his feed and the care given than he could have obtained with others, he has renewed cause for satisfaction.

In this group of cows, four records are for their second year, and three for their third yearly records, demonstrating that they "come back" repeatedly and improve their previous year's work. As illustrating this, we cite the case of Anton's Patience 24474, whose three years' records are as follows:

|                   | Pounds Milk |
|-------------------|-------------|
| First year .....  | 7618.80     |
| Second year ..... | 10358.80    |
| Third year .....  | 11934.00    |
|                   | Pounds Fat  |
| First year .....  | 430.15      |
| Second year ..... | 572.82      |
| Third year .....  | 643.16      |

While these are not phenomenal records, they show the great value of A. R. work to the dairyman in following just what his cows are, or should be doing. The number of breeders who are taking advantage of this work is steadily increasing.

#### GRADE AND PURE-BRED HOLSTEINS.

Thirty-six head of choice grades and some registered Holsteins were received by Van Woerden & Fisher

## WHY EXPERIMENT?



When you can buy a silo built by a concern that knows how.

The Ideal Green Feed Silo has many practical patented features which are necessary to keep and preserve ensilage. A little investigation will convince you that it will pay to erect a silo.

The next question is "What silo?" You cannot afford to experiment.

You want a silo that by many years of use has proved its worth.

Profit by the experience of others who have built cheap home-made re-sawed silos in order to save a little expense in the start and later on replaced them with the Ideal Green Feed Silo.

Your wife wouldn't experiment with a leaky can or jar for putting up fruit, etc. Then, why should you take a chance on your ensilage put up in a common water tank type of silo when you can buy an absolutely air-tight tongued and grooved Ideal Green Feed Silo that has been used successfully for the past twenty years.

Write for silo folder C for full information.

### DE LAVAL DAIRY SUPPLY COMPANY

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

### Ensilage Cutters and Alpha Gasoline Engines

### Holsteins For Sale--A. R. O. Breeding

We offer 12 females of the very best and most promising heifers raised here, five coming fresh this late fall and winter; also a young bull ready for service. All out of A. R. O. dams.

J. H. DE HOOGH & SON

Twin Brook Stock Farm

Lynden, Wash.

### HOLSTEIN HEIFERS---Choice High Grade Stock

We are offering to sell 30 young Holstein cows, fall freshening; also a choice bunch of Holstein heifers out of registered bulls with dams on both sides great producers, bred to registered sires, will freshen in early spring. If you want something of this kind, tubercular tested, write for particulars at once and mention this paper.

F. F. FOLSOM,  
204 4th Ave., Kent, Wash.



about the middle of July and by August 1st nearly that number from their herd had gone to new owners. Notwithstanding the dry season the demand for cows in the city supply and condenser districts have been good, indicating that feeding preparations have been made without regard to pasturage conditions.

Among the registered cows in this herd in fine condition are Helena Pontiac with 70 lbs. milk per day record and good for 25 lbs. 7-day butter record; Vale Burke, Charlotta Burke and Alice Burke, all registered, are a very choice trio, 2 years old and over, bred to a 22-pound record son of King of the Pontiacs.

Clothilde Riganeta Dekol Lady is another fine young cow out of a dam with record of 76 lbs. a day and 4.01 test.

The cow Jessie Cornucopia, Pietje 201,560, is out of a dam with a yearly record of 1,800 pounds milk and a 7-day butter record of 21 pounds. She is bred in the 30-lb. record line of King Segis.

Mr. W. E. Wall, of Centralia, was one of the buyers, taking over a fine show bull, 8 months old, weighing 865 pounds crated, a grandson of Homestead Jr., De Kol.

In the herd is a fine bunch of high grade cows coming fresh in the early fall and some calves of most excellent types.

#### TESTING GUERNSEYS.

In the registered Guernsey herd of Augustine & Kyer, Seattle, there are several cows to be entered in the yearly test. The cow Willows Chartreuse, a daughter of Imp. G. Chartruse, has produced 2,080 pounds of milk and 108 pounds of butter in 82 days in her two-year form. Under correct treatment her record will be considerably above 500 pounds butter at mature age.

The dam of Melba's Prince produced 508 lbs. fat at 3½ years of age. The young calves from this breeding therefore can hardly fail to make good as producers and breeders.

#### GUERNSEYS AND HOLSTEINS.

Some of the leading dairymen supplying milk to the certified trade in Seattle and Tacoma find it a good practice to mix the milk from cows of the different breeds, but Mr. B. S. Fryar of Sumner cautions against the crossing of pure-bred Guernsey and pure-bred Holstein or any other of the pure breeds. Holsteins excel in quantity while the Guernseys produce color and a greater proportion of fat and a mixture of their clean milk is attractive to buyers and brings the price. The crossing of these breeds produces mongrels, ugly in appearance and of very uncertain capacity, therefore it is advisable to keep the breeds separate.

Several of the young Guernsey cows in Mr. Fryar's herd are out of imported dams and are showing A. R. records above the average leaders of their respective classes. There are also some fine young registered Guernsey male calves from noted ancestry, among them Lula's Prince of Arrow farm, Woodrow of Arrow farm and Coquettes Boy of Long Meadows.

In Holstein sires, Sir Rag Apple Soldine, 2½ years of age, is out of a 32-lb. record dam. Sir Hartog Kornryke is another high record animal and Maple Lodge, a coming 2-year

old, is sired by Pontiac Boreas, dam Heroine Friend Vale. These are all out of A. R. O. ancestry, both sires and dams being above the 600 pound butter per year record. The pure bred calves in the herd are in excellent condition and there is a good bunch of high grade cows from which selections are being made.

#### HOLSTEIN BULL CALF AT \$20,000.

Dairymen in the Pacific Northwest are naturally a little slow in putting hard earned money into bull calves the return in profit for which they must wait a long time. But when such plan can be properly financed no investment pays better providing an animal with good parental records is obtained. The dairymen in the middle states are realizing this fact from experiences in selling cows to the coast dairymen. In the matter of care and feed the cost of raising a pure bred cow which will produce 400 pounds butter per year or over is no greater than that of a grade or one producing only 250 pounds but there is a great difference in the selling price or actual values.

As an indication of high mark in estimating the value of a good sire the Western Holstein Breeders' Consignment sale June 5 the Holstein bull calf, King Segis Pontiac Chicago, brought the record price of \$20,000, the crowd doing a tremendous cheering stunt when the hammer fell. The calf was sired by the great King Segis Pontiac, with 33 A. R. O. daughters, and his dam was Johanna de Kol Van Beers with a butter record of 40.07 lbs. in 7 days, 151.43 lbs. in 30 days, 288.06 in 60 days, 418 lbs. in 90 days and 541.35 lbs. in 120 days, which is the worlds butter record for that period. To manufacture that amount she produced 10,498.10 lbs. of milk. The calf was consigned by R. E. Haege, Algonquin, Ill., and T. E. Getzelman, Hampshire, Ill., and was eagerly competed for by many of the owners of the great Holstein herds of the country, but three Chicago men staid the longest and got him for their herds at Barrington, Ill. They are H. Stillson Hart, Geo. E. Van Haagen

## WAR

Has caused the price of wheat to advance. Farmers are not selling freely. Flour mills have not commenced operation. Mill feed is very scarce and hard to buy at any price.

Prices on Cane Molasses, Oats, Barley and Linseed Oil Meal are reasonable. Hence, we are able to manufacture

### ALBER'S MOLASSES FEED

at a price that makes it the cheapest feed on the market, when the feeding value is taken into consideration.

Albers Molasses Feed is a combination of Cane Molasses, Ground Barley, Oat Middlings and Linseed Oil Meal. It is a milk-maker and can be fed at a profit.

If your pasture has dried up, start feeding Albers Molasses Feed today. Your dealer can supply you.

### ALBERS BROS. MILLING CO.

Largest Cereal Millers in the West  
TACOMA SEATTLE

## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

**J. D. ROSS & SON**

**Kent, Wash.**

## HOLSTEIN HOME

Home of Maldeta Canary Mercedes, grand champion at Washington State Fair 1913, and the record price cow (\$1800) west of the Rockies. If you want a bull of the producing and show kind to head your herd let me tell you about some of my young ones.

**E. B. MARKS, Proprietor**

**North Yakima, Washington**

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

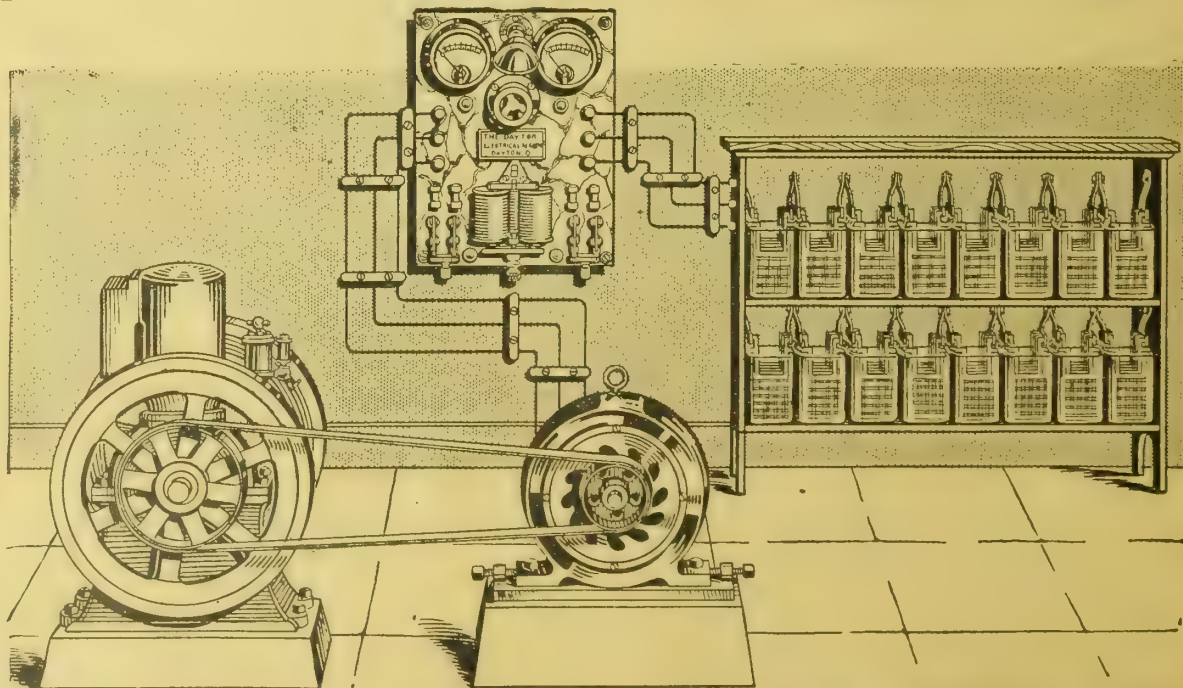
**E. H. THOMPSON, Mt. Vernon, Wash.**

## Electric Lighting Systems

Furnished Complete for  
**HOME, BARN and DAIRY**

Why use foul smelling kerosene lamps when a clean, brilliant

light can be had instantly and no danger from fire. Let us tell you more about them. Catalog free.



**RACINE BOAT & AUTO COMPANY,**

**Polson Bldg., SEATTLE, WASH.**



and Spencer Otis, Jr. It is not only the record price paid for a bull of dairy breed, but for all breeds in Chicago.

Other bulls offered sold for plenty of money, but of course the prices they brought seemed insignificant in comparison, with the record breaker. King Frontier Pontiac made \$1,700 and others smaller figures.

#### Cows at Good Prices.

A wonderful bunch of cows was sent up by T. E. Getzelman, Pontiac Lady de Kol, little more than a two-year-old, but out of Pontiac Lady Korndyke, holder of two world records for butter when made, selling for \$2,850. Pontiac Korndyke Maid, butter record 33.76 lbs. in 7 days, brought \$1,350, and her daughter, Pontiac Korndyke Maid 2d, calved March 13, 1913, \$1,005. Iowana Farms bought the splendid, great, big cow, K. P. Lilith Clothilde for \$2,150, this matron's butter record being 29.04 lbs. in 7 days made from milk testing over 4 per cent. fat. K. P. Elinda, still in the same consignment brought \$1,500, record for butter in a week being 24.62 lbs. and her test 4.24.

A great crowd of fully 500 people was gathered at the ringside, the selling space being arranged in shape different from that in vogue at sales of beef cattle. With the auctioneer's box at the south side of the ring, a small raised platform is in front of it, and a gentle, much-handled dairy cows stand there quietly while being sold. The first 78 head sold averaged \$450; when 145 had changed hands the average had risen to \$800.

#### GUERNSEYS AS FAVORITES

The consumers of milk in all cities are demanding better milk, richer milk, and the Guernsey cow is the dealer's salvation, says E. M. Fitz Maurice, in Guernsey Breeders Journal. The Guernsey cow is not only the milk dealer's cow. She is also the farmer's cow. She will produce more rich milk with the amount of food consumed, than cows of any other breed. This has been proven by tests at the New York and New Jersey experiment stations.

The Guernsey herds stand at the top at the creameries. Milk condensers, too, prove the worth of the Guernsey cow. The Pacific Coast Condenser Company, located here, pay by test, using 4% as a basis. For instance, the price of 4% milk is \$1.65 per hundred. How many Holstein herds will average near 4%? They will get around \$1.50 for their product. Owners of Guernsey herds receive \$2.10 and upwards, because of high tests.

Yearly records are what prove the worth of a cow. Any ordinary cow ought to do well for at least a week. But the Guernsey cow must produce well for a full year, and the large number in the advanced registry, prove the worth of the Guernsey.

I am personally acquainted with the records of the first two daughters in milk sired by the Guernsey bull "Marcia's Glenwood of Pinehurst," owned by Mr. Coffin of Eau Claire, Wisconsin. These two heifers entered the Illinois dairy contest. They finished second and third over all breeds under three years of age, and third and fourth over all breeds and cows of any age. Your readers are familiar with the work of those other Glen-



#### READ THESE CONVINCING LETTERS

From Hazlewood Dairy Farm, Christ Naegeli, Prop., Oregon City, Ore.

"After much persuasion I consented to give Dried Beet Pulp a trial for the feeding of dairy cattle. I will admit further that I consented with considerable reluctance, for I did not think the pulp could be profitably bought and fed, holding to the idea that beets could be raised for much less than the price which I paid for beet pulp.

"I have demonstrated to my own satisfaction that a dairyman can buy the pulp for much less than he can raise the beets, and that the dried pulp is as good feed as the green beets, and as a milk producing feed when the grass is gone I have not yet found its equal, notwithstanding the fact that we of the Willamette Valley can raise cow kale to perfection and very cheaply.

"Last season I did not start to feeding beet pulp until very late, but this year will com-

mence as soon as the grass is gone, and will feed it in connection with mill feed, all winter."

(Signed)

CHRIST NAEGELI, Prop.

From Mr. A. Zeeuw, Thomas, Wash., one of the best known dairymen in the northwest.

"I have fed your dried beet pulp for the past two seasons and expect to feed it again the coming fall and winter.

"I find it an excellent feed, both as a milk producer and a conditioner. I can highly recommend it to anyone in the dairy business, as it keeps the cows in a healthier condition than when feeding shorts or ground grains."

(Signed)

A. ZEEUW.

#### Write For Our Booklet "Profitable Feeding"

With full information and feeding instructions. Sent free on request.

#### THE LARROWE MILLING COMPANY

Sixth Floor, Central Building

LOS ANGELES, CAL.

The only practical feed that meets fully the vital necessity for bulk, palatability and succulence.

YOU have only to watch your cattle eat Larrowe's Dried Beet Pulp just once to appreciate how palatable it is. They take it ravenously. They like it because it is a natural vegetable food. Even while in the pasture they will eat it with great relish, and when deprived of green food do not suffer in health or fall off in milk production if a suitable proportion is included in their ration.

Larrowe's Dried Beet Pulp is as digestible as it is palatable. It also makes digestible the entire ration in which it is included, because it makes the whole loose and bulky. This one fact explains the reason why, while rations can be made up of various feeds so that they will contain equal nutriment, judging by analysis, the Dried Beet Pulp cannot be omitted from any ration without a distinct loss that affects both the health of the cow and the amount of her milk. A light, loose food in the cow's stomach is open to the action of the gastric juices, while a solidly massed food repels them and makes digestion difficult. Larrowe's Dried Beet Pulp swells from 5 to 6 times its bulk when moistened. It is practically the only feed which does not become a solidly packed mass.

#### PROVE ITS VALUE WITH ONE SACK

Go to your feed dealer today and get one 100-pound sack and test it on one cow whose milk record you know. You'll get instant results—1 to 5 pounds more milk per day from each cow.

Be sure you get "Larrowe's." It is never blackened or burned. Always uniform. Keeps indefinitely.



is preferred by many feeders on account of its sweetness. Just the plain beet pulp with beet molasses dried. Fine for fattening; also for horses, hogs, etc. It is put up the same way as the plain and sold on the same basis. Ask your dealer for it.

wood Guernseys "Dairymaid of Pinehurst" and "Jedetta of Pinehurst" in the Iowa contest.

Guernsey breeders can do much for the Guernsey cause, and at the same time help the owner of scrub cattle to work into higher producing cows by first proving to him the merits of the Guernsey, and then selling him a pure bred sire at a reasonable figure.

#### CHICONA FARM GUERNSEYS

To be Shown at Northwest Fairs.

In a recent letter to the Northwest Horticulturist and Dairying, Mr. A. L. Gile, manager of the Chicona Farm of noted Guernsey cattle, Berkshire hogs, and Belgian horses, Chinook, Wash., writes that it is his intention to show at the Spokane Interstate Fair, and the State Fairs at Salem and North Yakima. His Guernsey herd is of higher quality than last year, and no doubt will win their share of the ribbons.

The demand for stock has been good only three young bulls remaining unsold, one whose dam milked close to 50 pounds per day. She has a daughter producing 2 pounds butter a day average for six months, now under test for advanced registry. Mr. Gile is proceeding in the right direction to maintain his reputation for producing practical and profitable purebred Guernseys.

#### VAN WOERDEN & FISHER'S SHIPMENT

The July shipment of Holsteins for Van Woerden & Fisher arrived on

## The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm. Write for prices on trial-lot shipments.

#### THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.



"Don't Sit on the Cow's Tail"

The CHAS. H. LILLY COMPANY, Seattle

## Flies Can't Stand It

but it doesn't hurt the milk—use

**LILLY'S FLY KILLER**

freely on your stock—it'll save you money which means making money.

All Dealers 35c quart, \$1.00 gallon, \$3.50 for 5 gallons.

## HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. H. Hollingsworth, LADNERS, B. C.



A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.

THE E. N. PEASLEE CO.,  
Clarkston, Wash.

#### Oregon Collie Kennels

Established 42 years. Choice Puppies (either sex) Breeding Pairs Bitches in whelp and stud dogs for sale.

Send 2c stamp for illustrated catalog.

C. D. WAIR  
Shadland Farms  
R. F. D. 8  
Amity, Oregon



the 13th in good condition for immediate buyers.

Some of their regular customers have been on the waiting list for this announcement for some time. Both the grades and the registered stock are choice throughout, of excellent breeding and ideal type. A number of the cows are bred to a good son of the King of the Pontiacs and their offspring cannot fail to make good in any herd. This shipment will supply only a small part of the demand for cows from now on during the fall.

#### DAIRY INTERESTS AT CHIMACUM

Northwest Washington particularly the Olympic peninsula, is becoming noted for excellent records made by several breeders of the leading dairy breeds and for the development of dairy products commercially.

The Hon. D. S. Troy is a tireless worker, always ready to lend substantial aid to those desiring to engage in dairying and who require help as beginners.

He is the manager of the Glendale Creamery Company and of several other plants in Jefferson and Clallam counties. Both butter and cheese are made at the Glendale plant. The Jersey breed predominates with the patrons of the seven creamery plants, and Mr. Troy is constantly breeding up to get a higher average butter fat production. He has some registered dams and sires related well up in blood to Adelade of Beechlands which produced nearly 1000 pounds of butter in a year. As a rule pasture is good in the Chimacum valley but oats and vetch the combination silo crop for early and corn for winter silage, together with some roots will figure in the future feeding plan.

Hon. Wm. Bishop, the famous Holstein breeder has had good success from the importations made last spring from New York. He has now a fine crop of youngsters from Vee-man Hengerald breeding sire of his great cow Chimacum Wayne Boone, whose 4-year record is 33.69 pounds butter in seven days and 137.22 lbs. butter in 30 days. His senior yearling sire is a son of Margie Newman, the cow for which the Canadian Government paid \$2000. This animal has the highest milk record of dams on both sides of any bull known to history, and is a record for which Mr. Bishop, his district and his state may justly feel proud. The offer of \$5000 was refused and preparations are being made to show at the P. P.

Exposition in 1915.

Mr. Chas. Eldridge whose farm became famous through the great Holstein milk producer Margie Newman, has some youngsters whose records at maturity is likely to eclipse that of Margie. Excellent pasture throughout most of the year is a valuable feature here.

Mr. Hugh Nesbit, of Chimacum, started to breed registered Holsteins by buying from the home breeders in the valley a few cows for foundation. Lated he bought from Morris & Sons, California, the calf Segis Riverside Pontiac whose dam has a record of 31.47 lbs. butter in 7 days. His sire is closely related to the young bulls recently sold in Chicago at fabulous prices, and some noted records are likely to be made at this place.

Mr. Thos. Yarr, Chimacum, has also a fine herd of pure bred and grade Holsteins and is taking pains to breed up with the best herd sire obtainable with high ancestral records.

Those engaged in pure bred lines as well as those in this district who are making butter or selling cream and milk have found by experience that it pays to get the best obtainable in pure bred sires. Conditions here naturally prevailing affords pasture during a large part of the year, but with good producers the feed problem is not difficult to solve, especially where oats and vetch silage and root crops are produced so abundantly.

#### KEEPING UP THE MILK FLOW

The leading dairymen in the White River Valley are keeping up a good average milk flow during these dry weeks of August because they have made previous preparations. Some are using good ensilage made from oats and vetch, others use alfalfa and concentrates. Mr. Zeeuw, of Thomas, feeds the following mixture in combination with hay:

|                       |          |
|-----------------------|----------|
| Dried beet pulp ..... | 200 lbs. |
| Shorts .....          | 160 lbs. |
| Alfalfa meal .....    | 200 lbs. |
| Oil meal .....        | 100 lbs. |

These feeds are thoroughly mixed and soaked, fed as a concentrate in proportion to the amount of milk produced per cow.

Several other dairymen in the valley are feeding about the same dairy ration and are now getting the full benefit of the increased price of the market on butter fat.

## STOCK

#### GROWING PORK

The annual increase of horses, cattle, and sheep ranges from fifty to 100 per cent. The increase of hogs should be from 500 to 1,500 per cent. The sow has the advantage in bringing forth two litters a year and farrows several at each litter.

Dr. Warrington in "Chemistry on the Farm", states that for each 100 pounds of feed consumed, the different animals make gains as follows: Cattle, 9 pounds; sheep, 11 pounds; and hogs, 23 pounds. Pigs then make nearly two and one half times the gain over cattle for the amount of grain consumed.

G. H. Glover, of the Colorado Experiment Station, states:

The man who hauls hogs to market instead of corn or other grain, is the one who should make money. Because of the fact that hog raising when properly managed has been so profitable, the hog has been styled the "Mortgage Lifter." The one enemy to the business is hog cholera. No doubt much can be done in controlling cholera by the farmers cooperating in adopting measures which will prevent the dissemination of cholera. It is up to the farmers themselves on last analysis to confine cholera on the one farm where it starts by strictly following the advice of sanitary authorities and all working together to this end. I know of a farmer who kept his hogs healthy

## Registered Guernseys For Sale

We Offer an Excellent Young Bull from Melba's May Prince and Imp. Chartreuse. The dam of May Prince produced 508 lbs. fat at 3½ years and the dam of the young bull is under A. R. test, with an average of 41.3 lbs. milk per day for 104 days to July 1, and 4.3 per cent. fat. We offer male calves of like breeding which can be obtained at lower prices now than several months hence.

Write for prices and further particulars. Terms to responsible parties.

**Augustine & Kyer**

115 First Street  
Seattle, Wash.

## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow.

**E. R. BRADY**  
Satsop, Wash.

## Meadow Brook Farm

### Breeders' of Pure Bred Ayrshire Cattle

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

**A. P. Stockwell, Aberdeen, Wash.**

## A. J. C. C. JERSEYS

### Big Producers

For Sale—A fine bull calf, sired by Gertie's Stoke Pogis 33rd, out of Dixie Bertha, a sister of Morrow's Select, which made 826 pounds butter in one year. A bargain at my price, considering quality. Have both Island and American bred. Ancestral records of the very best. Particulars on application.

**J. B. EARLY**  
Grandview, Wash. (Yakima County)

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## CASH FOR CREAM

Highest market price. Guaranteed test. Prompt cash payment for each shipment. We are also in the market for eggs.

**MILLER BROS. CO.**  
1532 Commerce St., Tacoma, Wash.

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

**WILLOWMOOR FARMS,**  
Redmond, Washington



for four years while all the neighbors were losing their hogs from cholera. He did it by eternal vigilance in keeping infection out, and this man made a regular chore of cleaning the hog pens every Saturday afternoon.

#### LIVESTOCK IMPORTING PROVISIONS

Persons interested in the importation of live stock should obtain the latest regulations (B. A. I. Order 209, effective July 1, 1914), by application to the Chief of the Bureau of Animal Industry, Department of Agriculture, Washington, D. C.

#### WOODLAND BERKSHIRES AND ARTICHOKE

The Woodland stock farm at Lacy, Wash., is preparing to show at some of the fall fairs. They have a fine lot of youngsters by Centralia Duke and Silver Lee 3rd, in all about eighty head under six months of age. Sales have been good, in fact they have had to ask two buyers to leave their purchases until after the fairs. This farm is becoming noted for the fine crop of artichokes grown. One field has an immense crop after being pastured for four years without replanting. Artichokes and peas with a little other grain finishes the hog in fine shape.

#### SILAGE AND ALFALFA FOR BEEF PRODUCTION IN WASHINGTON.

C. H. P., of Sunnyside, Wash., raises a question of wide interest, viz.: "Can I make any profit by feeding my crops of silage and alfalfa into beef?" He is offered cattle of any age, the feeder to receive the gain produced as payment for his feed and labor. He asks how much gain he should secure per day, what age cattle he should select and whether he should receive more than market price for the gain made.

According to the reply of R. C. Ashby, in the Gazette, under present conditions he should be able to make a profit from his feed, but there are several factors to consider. The details of such an agreement, as decided upon by owner and feeder, would have an important bearing upon the result.

For two reasons select young steers rather than old, and steers not too fat. First, the younger cattle will produce more gain from the same amount of feed, and, second, thinner cattle will make larger gains from the ration he suggests.

Regarding influence of age, Bulletin 132 of the Nebraska Station has determined that the cost of feed for 100 lbs. gain of calves at \$4.10 and yearlings at \$7.61. Cost of feeds—Corn 66c per bushel, alfalfa \$10 per ton, silage \$3 per ton.

Older cattle would finish better, but the writer believes quantity of gain more important than finish in this case. Hay fed beef comprises a large part of the market supply on the Coast. Grain feeding is increasing, but thus far hay fed stuff really holds the balance, and grain must be used wisely. On the other hand, extravagant use of grain is not necessary for good results as is shown by the Pennsylvania Bulletin 118. Two lots of light plain feeders were fed during the winter of 1911, for 126 days.

Figured on the basis cost of feed-

ear corn 70c per bushel, silage \$3.50 per ton, cottonseed meal \$32 per ton, the cost of 100 pounds of gain was \$11.36 where the ear-corn was the principal part of the ration, and \$9.02 where corn silage was the principal feed, or \$2.34 in favor of the ensilage.

The following shows how the feeding was done:

|                                           | Lot 1<br>lbs. | Lot 2<br>lbs. |
|-------------------------------------------|---------------|---------------|
| 1st 56 days feeding:<br>(Dec. 1-Jan. 26)  |               |               |
| Daily gain per steer....                  | 2.52          | 2.40          |
| Av. daily feed per steer:                 |               |               |
| Ear corn .....                            | 11.85         | .....         |
| Cottonseed meal ....                      | 1.90          | 1.90          |
| Corn silage .....                         | 27.65         | 48.09         |
| 2nd 56 days feeding:<br>(Jan. 26-Mar. 22) |               |               |
| Daily gain per steer...                   | 1.33          | 1.30          |
| Av. daily feed per steer:                 |               |               |
| Ear corn .....                            | 15.28         | 13.18         |
| Cottonseed meal ....                      | 2.06          | 2.06          |
| Corn silage .....                         | 18.91         | 22.56         |
| Last 70 days feeding:                     |               |               |
| Av. daily feed per steer:                 |               |               |
| Ear corn .....                            | 15.03         | 13.54         |
| Cottonseed meal ....                      | 2.24          | 2.24          |
| Corn silage .....                         | 18.47         | 21.54         |

With silage alone very good gains were secured on Lot 2 during the first two months' feeding. Then when put on grain they continued to do as well as Lot 1. The same results would not always be obtained, but a heavy grain ration is not essential to gains where good silage is available.

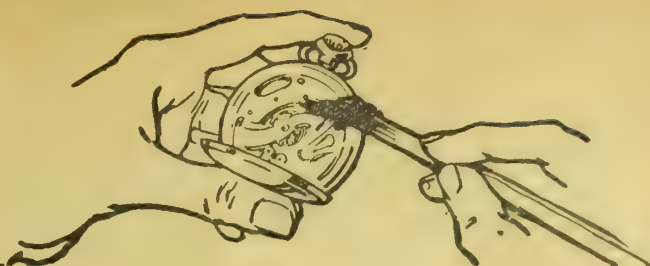
Starting with 900-lb. cattle, the feeder should secure average gains of 1.6 to 2 lbs. per head daily for two months or more. The latter would be a very good gain. A good ration would be—silage 20 to 25 lbs. per head, allowing the cattle to eat as much alfalfa hay as desired. A ration of 25 lbs. silage and 15 lbs. alfalfa hay would supply 2.4 pounds of digestible protein and 20.4 pounds of dry matter daily. While furnishing more protein than required such a ration would prove very satisfactory. The proportion of silage to alfalfa should depend upon the supply of silage available and the cost of alfalfa. Some seasons excellent feeding grades of wheat or barley (rolled) can be secured in Eastern Washington at \$23 to \$26 per ton, delivered in car lots. At such cost one should carefully consider the use of a light grain ration for a couple of months at the close of his feed.

At the Washington Station last season, the writer produced gains on Shorthorn yearling steers at a cost not exceeding 9c per lb. This was on a grain and alfalfa ration, grain costing \$23 and \$24 per ton.

H. C. Davis, of Granger, one of the leading dairymen of Washington, cuts all the hay for his cows and would feed it no other way. All the alfalfa is put through his ensilage cutter.

Twenty tons of silage and five to seven tons of alfalfa hay per acre afford opportunity for beef production. Moreover the winter climate of the Yakima Valley is unexcelled for feeding operations. The soil is light enough to pay large returns on the manure produced by the steers and a manure valuation of \$1.50 per ton is probably quite low in this region. It is the writer's opinion that this will be a great feeding and finishing section within a few years.

The larger packers feed many cattle and their buyers contract thousands of head at the ranches and on



## You Wouldn't Put Axle Grease on Your Watch

Isn't it almost as ridiculous to use ordinary farm oil on your cream separator? It's delicate mechanism demands a special oil. We make good harvester and gas engine oils, but we do not recommend them for separators. If your separator is to do its best work, you must lubricate it with

## Standard Hand Separator Oil

It is made especially to suit the peculiar mechanism of cream separators. It is of just the right body. It does not "gum." It keeps the bowl running swiftly and smoothly—you get *all* the cream. There is no better oil—regardless of price. Dealers everywhere.

**Standard Oil Company**  
(California)

## HAMPSHIRE SWINE

"THE HOG WITH-  
OUT A HOLLOW"

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.

## PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.

## Chicon Farm Guernseys

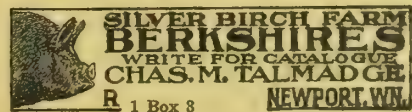
A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

## SOLID LIGHT COLORED JERSEY BULL CALF

Born October 10th, 1913; sire one of the best sons of Eminent; dam an American bred cow strong in the blood of Tormentor and Pedro; this cow is on test for the Register of Merit and in first six months produced 5665 lbs. milk. Price of calf \$75, registered and crated.

DAVID C. DILWORTH Opportunity, Wash.



WANTED GOATS — To buy two or three milk goats; state amount of milk at last kidding and oblige

Peter Eggers,

15th & Dock. Tacoma, Wash.

## HOLSTEIN BULL FOR SALE

Chimacum Aaggie Cornucopia No. 64100, H. F. H. B., bred by M. S. Nye, Preble, New York. Calved August 15th, 1909. His grandam Aaggie Cornucopia Pauline is a 34-lb. cow. Sired by Aaggie Cornucopia Johanna Lad Junior No. 36, 974 H. F. H. B. Dam Onda Dorothy Concordia Paul No. 67853 H. F. H. B. A splendid animal, his youngsters are making excellent records.

A few choice cows for sale. Write for prices or call.

F. I. MEAD  
524 California Bldg. Tacoma

## Purebred Durocs and Berkshires

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

Berkshires — We are offering some good breeding sows to make room for others. We buy and sell large quantities of choice hams and bacon. Quality is our motto.

Write today.

AUGUSTINE & KYER  
115 First St. Seattle, Wash

## BLACK LEG

Losses surely prevented by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50

Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

GOOD REGISTERED BERKSHIRES — Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.



the range. These cattle are put on the market when ordered. Grain fed cattle do not always bring their real value in competition with hay-feds.

Experience in feeding is invaluable. C. H. P. has a good opportunity to market his crops to advantage and enrich his farm.

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### SOME POULTRY PROBLEMS

#### Queries by Reader.

1. Will a well conducted poultry farm pay in the coast section of Washington?
2. Will one mating of hens make all eggs fertile?
3. What number of eggs will the average hen produce during a full lifetime?
4. What is meant by forcing the laying of eggs?
5. What character of food produces such results?
6. Is there any strain barred Plymouth Rocks, that compare in egg laying with the White or Brown Leghorn?
7. Is the White Leghorn as healthy as the Brown under like conditions? Why is White preferred?
8. Would asphaltum floor for chicken houses be good?

Reply: Yes, there are several poultry plants in Washington containing from 2000 to 3000 fowls, where the net profit is between 5 and 8 dollars per day. One man with only 2 years experience figured that his 200 Leghorns paid him 80 cents per hour for all the time devoted to them.

2. About one for every 12.

3. A hen usually lays best in her pullet year, the second year may be nearly as good, but from then declines rapidly. In one case a record kept up to the 5th year showed less than one-third as many eggs as during first year. The average hen lays, perhaps less than 100 eggs in her best year, but the average should be above 150.

4. Feeding for heavy egg laying.

5. A well balanced ration rich in protein, composed of the usual dry hopper mixtures and wheat. It is more important that none of the essentials are lacking and that there is plenty rather than to have an over abundance of varieties.

6. The Leghorns as a class are keeping at the head in the recent egg laying contests. Individual fowls of the B. P. Rocks with long bodies and large pelvic arch could be selected which would, under proper conditions, produce high egg records, but as a breed being raised for both meat and egg production have a lower egg record unless selections are made entirely of the egg type fowl. We know no strain of this class bred strictly for eggs.

7. Yes. The whites seem to be easier to keep up to standard and uniformity.

8. Asphaltum covered with litter might do for part. The natural ground floor where it can be sunned and spaded as part of a floor is preferred by the fowls.

#### EGG IMPORTS AND PROSPECTS

By opening the country to the importation of Chinese eggs produced from filthy feed, in the opinion of D. Tancred, Mr. Wilson has demoralized the whole poultry industry, now

one of the greatest in this country. Not being concentrated those engaged in it are not in position to secure their own protection. The markets are now thrown open to the eggs, largely a product of refuse under the care of 6 cents per day labor.

Mr. Tancred states: I have been a Democrat in all national politics ever since I cast my first vote for Grover Cleveland, but if Wilson—Bryan et al have not succeeded in starving me before next election I will vote to retire these gentlemen to Princeton and Chatauqua.

The Northwest Horticulturist and Dairymen has astonished me by the amount of business it has turned my way in a frightfully dull season. I shall continue to advertise with you and believe that the great increase in the demand for eggs next season, because of the famous world's fair will pull the poultry raisers out of the hole and by that time we will surely have organized sufficiently to put an end to this Chinese bogey. The California producers are organizing splendidly—taxing themselves 5 cents per case to pay the cost of the fight.

Surely the men of the northwest are their equals in spirit and enterprise.

#### SUMMER CULLING

We are now in the midst of the culling season. And as this is a season which taxes the vigilance of the poultry keeper we are going to venture a few suggestions gleaned from our experience plus such other sources as happen to be available. It is at this time that the loafers and boarders of the flock exact their steady toll until caught at it.

Most poultrymen can make a shrewd guess as to when a hen is not laying and by using the pelvic bone as a check one need not sell off but a small percentage of the layers. We find that by watching the combs and the plumage we can spot the non-layers with considerable accuracy and then by feeling of the pelvic bones and going to the trap nest record of the pen, we can tell whether it is time to remove the bird or to give her another chance. All that are thus gradually culled out are thrown into a portable fattening coop. Here they are collected and fattened until there is enough for a shipment when they can be sent to market.

From station reports and private sources as well as indicated by our own experience it is pretty well demonstrated that it does not pay to keep over the hen that starts in to moult before September or October. We have found that our best layers continued to lay until September and later and that they commenced laying again about January, or as early as the ones that commenced moulting in July. There are exceptions, but certainly not enough to justify holding onto and wasting feed on bulk of the early moulting birds.

From time to time we note articles



### Insures Full Milk Pail

Cows give more milk and make milking safer and easier when not bothered and bitten by flies. Relieve their distress by spraying them with

### Conkey's Fly Knocker

Gives cattle the peace and comfort that insures more milk, greater weight and productiveness. Does not harm skin nor coat.

### Keeps Flies Away From Cattle and Horses

One ounce sprays two animals.

TRY IT 15 DAYS, Money Back if Not Satisfied Try a can today. Gallon \$1.00, 5 Gallon \$4.00.

Sold by most dealers. Inland prices: Gallon \$1.25; 5 Gallon \$5.50.

The G. E. Conkey Company Cleveland, Ohio

Coast Distributors Seattle Seed Company, Seattle Inland Seed Company, Spokane Routledge Seed & Floral Company, Portland



### Conkey's Fly Knocker

Is Sold by

POOLE'S SEED & IMPLEMENT CO. 1507 Pacific Ave., Tacoma, Wash. Write or call for it

### PEERADA BERKSHIRES

Headed by Artful Masterpiece 8rd splendid son of Masterpiece, the world's most famous Berkshire. Bred gilts, boars and weanling pigs. **NEWTON H. PEER** Mention this paper TACOMA, WASH.

### Berkshires

Very prolific, early maturing stock of high quality. Some fine youngsters ready for delivery. Satisfaction assured.

PETER HANSON, Box 62, East Stanwood, Wash.

### English Berkshires

Sunset Duke the 4th, 156579, heads my Registered Herd. Champion Sow 1912-13 State Fairs.

Write for prices and particulars.

J. A. SIMONSON, Route 7 North Yakima, Wash.

### DUCKS

### The Best In White Runners

WE ARE NOW OFFERING FOR SALE

### Drakes, Trios & Breeding Pens

Bred from the Best American Strain

Write for prices and booklet

E. E. BLOOMFIELD Hillhurst, Wash. Box 22D

### White P. Rocks

First old and first young pen, Tacoma Show. Five blues at King County Fair. My large flock is a leader both in standard and prolific qualities. Write for prices on Eggs and Stock.

WM. SMITH Bremerton, Wash.

### Fine Registered Duroc Jersey Pigs

For Sale—Young Pigs, Brood Sows and extra fine Herd Boars. Write

JAS. S. COURTNEY White Salmon, Wash. R.F.D. No. 1

### Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD Route 1, Box 12 Fairbanks, Wash.

### REGISTERED DUROCS (Immune to Cholera)

All ages for sale, male or female, from prolific families. Shamrock Wander heads the herd. Shamrock Daisy farrowed 12 pigs. Shamrock Rose farrowed 14 pigs. Selah Agness farrowed 16 pigs. Write for prices.

A. H. IRISH, Wapato, Wash.

### DUROC PIGS

REGISTERED and REASONABLE. EITHER SEX J. HANKS & SON, Ellensburg, Wash.

### SOME CHOICE PURE BRED and cracking good BOARS 3 to 7 months old Write us for prices. "The B.K.M. Herd of Berkshires."

WOODLAND FARM, Lacey, Thurston County, Washington

### O.I.C. Hogs

### English Shire Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

YABOOM, WASH. S. M. SHIPLEY, Proprietor, Haller Bldg., Seattle.

### PEDIGREED COCKERELS

From Trapnested

S. C. White Leghorns and Barred Rocks

Blanchard Poultry Yards

C. WESTERGAARD, Mgr. Dept. H HADLOCK, WASH.

### Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. F. ALWARD Orting, Wash.

### EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

FRED A. JOHNSON 518 35th St., Tacoma, Wash.



This Dairy Feed contains the best grade of alfalfa blended with molasses, which is practically 50 per cent sugar, that is converted into milk without waste and loss of energy.



Leading dairymen all over the Northwest are using large quantities of it. They begin with about one quart of Shady Brook Dairy Feed per head twice daily—mixing with bran, shorts or other ground feed, for three or four days; then gradually increase the Shady Brook and decrease other feed until from four to seven quarts are used at each feeding. If your dealer does not handle it, write us.

## GARDEN CITY MILLING CO., Seattle, Wash.

WALTER SCOTT, MGR.

317 Board of Trade Bldg., Portland, Ore.

Seattle Dealers include—Chas. H. Lilly, J. L. Court, Galbraith, Bacon Co., Lehman Bros.

H. P. PRESTON, MGR.

Seattle, Wash.

Tacoma Dealers include—Kenworthy & Son, South Tacoma; J. B. Stevens, Coast Trading Co., Hill Cereal Co.

Improves the Quality and Quantity of Milk

Produces More Milk at a Less Cost

## Must Have Albers Calf Meal

Lakewood, Wash.  
Aug. 4, 1914.

Albers Bros. Milling Co.,  
Seattle, Wash.

Dear Sirs:

Would you kindly ship me 50 pounds of your calf meal by express as soon as possible C. O. D. English, Wash. Would not ask this favor but am unable to buy it at our local stores. In the last three days I have driven over thirty-five miles looking for your Calf Meal and could not purchase it. Would not be fussy only we have had good results with your Calf Meal and some awful poor results on some of the other so-called Calf Meal. I have tried Lakewood, Florence and two stores in Silvana and all wanted us to try other brands. We are raising a number of calves now and expect more and am in a hurry.

Thanking you in advance.

Respectfully,

(Signed) JAS. C. SHAY.

## CLOVER SEED VETCH TIMOTHY RYE ETC.

We have the seed for early fall seeding, over 99 per cent. pure.

Don't forget we handle **CONKEY FLY KILLER**, Conkey Lice Powder and all of their Poultry Remedies.

**BARTLETT'S** Calf Meal, the perfect milk substitute.

**CYPHER'S** Incubators and Brooders.

Send for Catalog and list today.

Please mention this paper.

## Seattle Seed Company

SEATTLE, WASH.

## FOR FALL SOWING

Vetches, Alfalfa, Clover, Grains and Grasses

We offer our new crop of "Diamond Quality"

**SELECTED, RE-CLEANED FARM & FIELD SEED at Lowest Market Prices. Special Mixtures for Special Purposes**

**Cover Crops for Orchards—Dry Land Pasture Mixtures**

WET LAND PASTURE—SPECIAL MIXTURES FOR BURNED-OVER LAND MIXTURES FOR PERMANENT HAY CROPS AND PASTURES

Our Seed Laboratory is in charge of a skilled analyst and all "Diamond Quality" seeds are TESTED for PURITY and GERMINATION.

## WRITE TODAY FOR SAMPLES

NOTE THEIR PURITY AND WEIGHT

Or send in your order direct. We guarantee full value for the money sent and will give your inquiries our prompt and careful attention.

Ask for Catalogue No. 50

**Portland Seed Co.**

PORTLAND, OREGON

Western Agents Clipper Fanning Mills—"The Vertical Blast."



## AUCTIONEER WM. ATKINSON

Vancouver Blk., Vancouver, B. C.

Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

## High Producing Holsteins

A young bull offered for sale from Lunde Oregon Fine, that has milked over 100 lbs. in a day, over 3000 lbs. in 30 days, over 20,000 lbs. in a year. Other bulls from her high producing daughters.

OTTO RUNDGREN, Mt. Vernon, Wn.

days as shown by trapnest records. And the price obtained for eggs of those that continue laying will more than make up. It must be remembered that most hens do not need much of an excuse in order to stop laying in the fall.

C. WESTERGAARD,

Hadlock, Wash.

## The BROOKS NURSERY

A. L. BROOKS, Prop.

LAFAYETTE,

OREGON

A complete line of Fruit, Shade, Ornamental nursery stock. Guaranteed true to name. My nursery stock is free from disease and pests; first-class in every respect. Extra large roots, also large in calibre. Any one wishing to set in large lots will get the benefit of wholesale prices. Also a choice lot of prune trees, 6 to 9 feet in height, which I will sell at reduced prices. It will surprise you in getting my price list before buying elsewhere.

in the poultry press relative to forcing the molt. As indicated by the above experience we would say rather emphatically "go slow" unless you are an expert and have proved that you can do it with a profit. For it must be remembered that eggs are beginning to command a respectable price in July and August, or just about the time when we are supposed to commence forcing the molt.

We are convinced that it is little use to try by any artificial means to make hens lay during the months of October and November.

We are content to give the hens the best of care and then leave it to the individual as to how late in the fall she is going to continue working.

For fall and early winter eggs we are willing to depend on the pullets which have hatched before May. To be sure there will always be a percentage of these pullets that will moult,—but those that do moult generally get thru in from thirty to sixty





WE ARE IN THE MARKET FOR A FEW

## Mortgage Lifters

Have You a Mortgage on Your Farm?

IF SO OR NOT  
BUY HIGH CLASS GRADE HOLSTEIN DAIRY COWS  
FROM THE  
SPOKANE GRAIN CO.

THE COWS WILL DO THE REST.

IF YOU CANNOT BUY COWS, BUY HOLSTEIN CALVES. WE HAVE BOTH FOR SALE, AND GOOD ONES. COME AND SEE US. IF YOU CANNOT COME, WRITE US.

We have some Fresh Cows ready for immediate delivery

**Spokane Grain Company**

Phone Sidney 444

4915 Eighth Ave. So.

SEATTLE, WASH.

JERSEY OR GUERNSEY FAMILY COWS

## Registered and High Grade HOLSTEIN CATTLE

While actual buying was a little quiet last month on account of the dry weather, the numerous inquiries coming show that dairymen will increase their herds owing to cheaper feed and higher butter fat. We are offering fresh and coming fresh cows that cannot fail to please buyers. Our young stock heifers and pure-bred bulls are developing in fine shape ready for the increased demand sure to prevail in the near future.

**H. S. ROYCE**

Savage-Scofield Bldg., A St.  
TACOMA, WASH.

Please mention this paper

## Christopher Nursery Co.

Established at present location for 25 years. Nurserymen for four generations is the record.

**APPLE TREES**—All leading varieties 4 to 7 feet stocky trees: Yellow Transparent, Gravenstein, Wealthy, Wagener, King, Olympia, Baldwin, Winesap, Winter Banana, etc.

**PEAR TREES**—A fine stock of Bartlett, Anjou, Bosc, Angoulene, Comice and others; also Dwarfs.

**CHERRY TREES**—A choice lot of Lamberts, Montmorency and other kinds.

**PLUM AND PRUNE TREES**—Strong Italian, French, Sugar Bradshaw. **SMALL FRUITS**—Gooseberry, Currants, Blackberry, Raspberry, Loganberry and other classes. Strong plants.

**ORNAMENTALS**—Roses affording satisfaction, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce and other coniferous, and small evergreens.

Write for prices and complete list and please mention this paper.

**JOHN A. STEWART & SON, Christopher, Wash.**

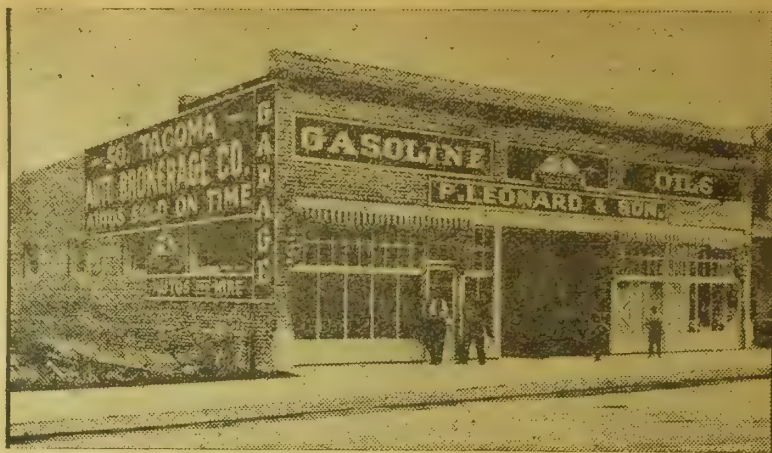
## Shrubs = Plants = Vines = Trees

Having taken over the entire stock of the Richland Nursery, we are prepared to fill orders for all kinds of Flowering Shrubs, Vines, Clarke's Seedling Strawberry Plants, European Grape Vines and Shade Trees in choice grades. Please let us know your needs early and get a copy of our catalog and prices.

**BREITHAAPT NURSERY CO.**

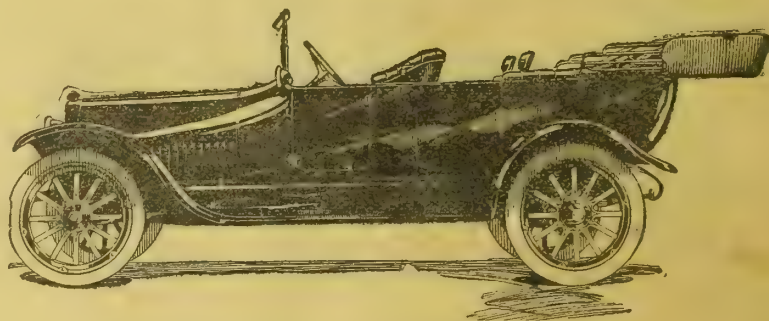
C. F. Breithaupt, Prop.

Kennewick, Wash.



## Mid-Summer Clearance Sale

of a large stock of rebuilt autos at prices that are right. Terms to suit. Our Stock is the largest in Northwest.



We buy in large quantities for cash and sell on a small margin. We own our salesroom, do our own selling. Draw your own conclusions about bargains. Here they are:

|                                                                  |        |
|------------------------------------------------------------------|--------|
| Ford, Model T—Just out of paint shop, tires good .....           | \$300  |
| Ford, Model T—Kellogg self-starter, perfect all around .....     | \$475  |
| Jackson—Like new, 5-pass., electric lighted, late model .....    | \$600  |
| Ford—Fine shape, late model .....                                | \$400  |
| R. C. H.—Hup make, run very little, a dandy car .....            | \$400  |
| Classy Little Roadster—Electric lights, tires all good .....     | \$350  |
| Overland—Four-pass., nice car for small family .....             | \$390  |
| Chalmers-Detroit—A dandy family car .....                        | \$390  |
| One Elmore—Four-pass., perfect in every way; snap .....          | \$375  |
| Studebaker Delivery Car—Like new .....                           | \$500  |
| Auto Delivery Car—Fine car for ranch, capacity 1500 lbs. ....    | \$300  |
| Studebaker—Classy four-door car, nickel trimmed; grab this ..... | \$475  |
| Three-fourths High Wheel—Sears Roebuck, light delivery .....     | \$140  |
| One Pass. Car—A dandy snap .....                                 | \$400  |
| Winton—One-ton truck, fine shape .....                           | \$225  |
| A Very Serviceable one-ton truck .....                           | \$300  |
| Studebaker "25"—Like new, small family car .....                 | \$525  |
| One Pass. 1913 Studebaker—Electric lights and starter .....      | \$1000 |
| Extra Special—One 6 cylinder 7 Pass. Mitchell .....              | \$490  |
| Steven's Duryea—Fine car for ranch, capacity 1500 lbs. ....      | \$300  |

This is only a partial list of our stock.

We also deal in Oils, Lamps, Tops, Tires and in everything pertaining to the auto business. Open every day, evenings by appointment. Write or call and inspect machines.

## South Tacoma Auto Brokerage Co.

5615-17-19 So. Union St.

SOUTH TACOMA, WASH.

Please mention this paper



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., SEPTEMBER, 1914

No. 9

## Evaporation of Apples

The choice apples of the Pacific Northwest command the very highest prices which world wide markets can afford to pay for the fancy trade, but this class of markets have a limit. The largest part of the world's apple crop goes to consumers who can afford to pay only what appears to them fair prices and in too many cases the expense between the producer and the consumer prevents any profit to producers for the ordinary grades.

Increased production and the uncertainty of ready markets abroad as is the case the present year brings to mind the advice of the English fruit buyer who was present at a meet-

ing of the Washington Horticultural Society three years ago. He said, "When your local markets have been supplied evaporate your second and third grades and don't depend on the European market for anything but the first grade." This was before the completion of the canal but whatever are the changes in the European countries, it is safe for apple growers to make preparation for evaporation from this time on, besides the best of cold storage facilities that can be made available.

The assistant pomologist U. S. Department of Agriculture, H. P. Gould has given careful attention to evaporation of apples in farmers bulletin 291, in which he mentions different styles of evaporators in use

as follows:

1. Cook stove evaporators.
2. Portable outdoor evaporators.
3. Kiln evaporators.
4. Tower evaporators.
5. Miscellaneous types.

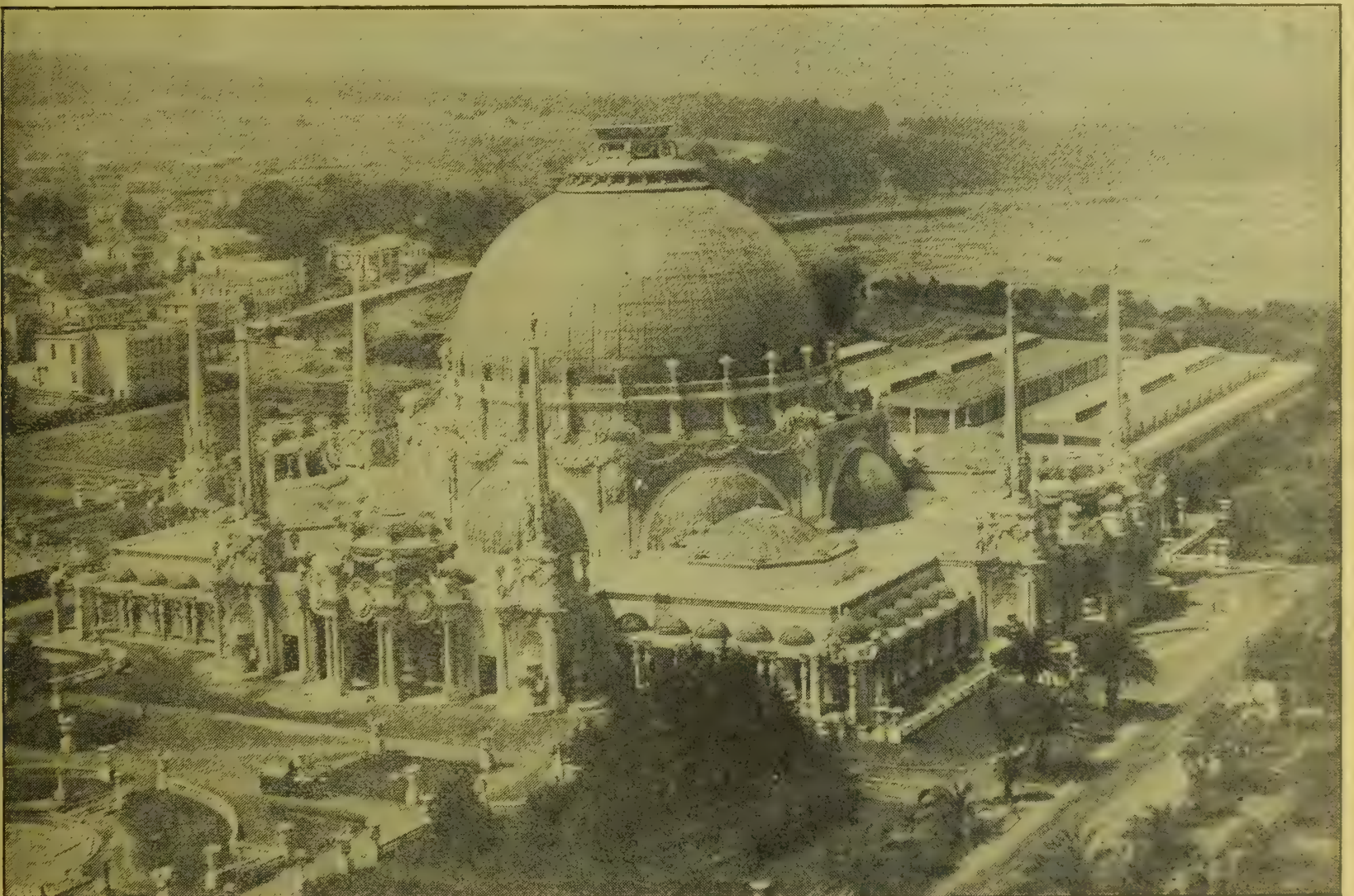
Some of the cook-stove evaporators are small box-like structures, usually made of sheet iron or galvanized iron, of such a size that they can be placed on top of an ordinary cook stove. They are arranged for holding a series of small trays, on which the fruit is placed after it has been prepared for drying. Various sizes are in use, from one covering only a portion of the top of a common kitchen stove and having a capacity of only a bushel or so a day, to those requiring the entire top of a

stove on which to operate it.

Portable evaporators usually have a capacity of 5 to 10 bushels a day. The dimensions are usually 2½ feet wide by 3 feet long and may be from 4 to 6 feet high or higher. These may be of wood or sheet iron except the fire box which must be of iron and far enough separated from the wood to be safe. There is space for ten trays, with drop doors at the sides. The drying inclosure should be absolutely tight at sides and ends, the air entering underneath and passing off through the hip roof of the top.

Any person with ordinary mechanical genius can make an evaporator of this kind.

(Continued on page 189.)



THE VAST PALACE OF HORTICULTURE AT SAN FRANCISCO.  
STUPENDOUS GLASS DOME ONE OF THE  
WORLD'S ARCHITECTURAL MARVELS

This illustration of the Palace of Horticulture was taken at a point 125 feet above the ground, the photographer being stationed on the huge Tower of Jewels, which is 435 feet in height. The Horticulture Palace is one of the most remarkable and beautiful structures upon the grounds of the Panama-Pacific International Exposition. The building is 600 feet long and 300 feet wide. The huge dome in the center is 186 feet high and 152 feet in diameter. The architecture of the domes and minarets resembles that of the mosque of the Sultan Ahmed I, at Constantinople, while the details of

the facades, spires and other decorations suggest the Eighteenth Century French Renaissance.

An idea of the magnitude of this dome may be had when it is compared with some of the most famous domes now in existence. The diameter of the Pantheon at Rome is 142 feet; that of the Duomo of Santa Maria del Fiore at Florence, 139 feet; the United States Capitol, Washington, D. C., 135½ feet; while the famous dome of St. Peter's at Rome is 139 feet in diameter. The other dimensions of the Palace of Horticulture are equally imposing, the building covering 223,000 square feet of ground, as against 62,000 feet covered by the Moque of St. Sophia. The building was erected at a cost of \$341,000.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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H. L. Blanchard, Poultry and Dairy.  
Horticulturist.

The proposed measure is a very popular measure with farmers according to a number of letters which we have received from our subscribers.

The stamp selling plan has been adopted by certain apple growers to obtain funds for advertising apples. The promoters might include standardization, that is, apple packages designated with a stamp should conform to certain specifications. The stamp would thus have a significant meaning to consumers and its advertising value become doubly effective.

According to decisions of the courts, the International Harvester Company, is not a bad trust but, as it does not conform in every detail to the Sherman Anti-Trust Law, must be dissolved. In view of the large exporting business built up by this company, which could not have been done by the smaller concerns, the question might be asked, "Is the Sherman Anti-Trust Law consistent with the best interests of the people, or does it need modification to distinguish between voluntary associated business and that which is brought together by forced means and methods. The Harvester case will be appealed.

## THE FAIRS.

Farmers should attend the fairs with a criticizing though not fault finding spirit. Exhibits afford comparison which is one of the best means of education. Whether of the very best or of the ordinary product it takes energy to make a showing. Of late our fairs are conducted with strong educational features prominent in the various departments. Our colleges and schools are doing nobly.

Attend a fair somewhere, and after some hours of careful observation of the things which interest most, you will enjoy a little fun. Make the fair visit one of relaxation and pleasure, forgetting for the time the daily routine of home duties.

Selfishness! After all discussions of the underlying causes of the present European conflicts, the real diffi-

culty may be summed up in the one word—selfishness. Civilization self-centered increasing in military strength for years finally reaches the point of explosion. Germany as well as other nations will benefit by this struggle, but what awful sacrifice. Sacrifice is the ladder by which humanity is elevated, but why will the people not as individuals and as nations willingly sacrifice selfish interests to gain the same high state of perfection which is otherwise attained by an unwilling sacrifice?

## CARSTENS PACKING COMPANY DAMAGED

The meat packing plant of Carstens Packing Company, Tacoma, was very badly damaged by fire of unknown origin recently. This was the most complete institution of the kind west of the Missouri River, the annual output being valued at \$5,000,000. The loss sustained is placed at approximately \$600,000.

Thomas Carstens, President of the Company, is truly a "Captain of Industry." During the past decade, he has been the leading spirit in the development of this valuable plant. The

The usual market for live stock at Tacoma continues to prevail.

## OPPORTUNITY IN RURAL VOCATION

It is a trying time for many while readjustments are going on throughout the world. Particularly so is the case with thousands of people who are depending upon days labor in the cities of this country, waiting for the wheels of industry to get into motion.

In this particular, most of our readers are more fortunately situated even though it may become difficult at times to meet some pressing obligations. Count up some of the comforts which abound to establish courage if necessary, plan intelligently and act promptly. Great opportunities are before the American farmer and husbandman. The problem is for the individual to thoroughly fit himself for a vocation in one of the rural industries.

## FEED COST AND HOGS

The increased cost of mill stuffs and mixed grains has caused some of the hog raisers in the coast section to do some figuring. The outcome naturally will, or ought to be, an effort to raise a little more of the necessary grain for the finish, feed period, on the farm. This can be done most cheaply perhaps, by growing more peas and speltz, or peas and barley. These grains grow well together in most coast districts on both upland and on the valley soils. The sowing should be so timed that when the hogs reach about 120 pounds, or from 4 to 4½ months from birth they can be turned into a patch of peas and speltz to be made the basis feed for at least 3 to 5 weeks until they reach about 160 to 170 pounds, then if confined to smaller feeding lots, and some additional mixed grain becomes necessary the amount required will have been considerably reduced by means of the pea-grain combination grown. A great variety of green stuff including clover, kale, and root crops is always obtainable in this section with ordinary

preparation and the pea combined with one of the grains mentioned affords the most natural feed for a good bacon finish. Above all it is necessary to have stock of good type which thrives well.

In the irrigated districts east of the Cascade range hog raisers may well bank on alfalfa and corn for profitable hog production.

## ONE REASON FOR HIGH TAXES

It has been estimated that the average cost to a county for convicting a criminal is \$10,000. Wrong doing is one of the costly burdens of the tax payer and the policy of officials who have charge of law enforcement should be that of controlling crime in its incipency.

On the contrary it appears to be the policy of some officials to encourage what may appear to them minor offenses and taxpayers are beginning to question if such conduct is required that a large office force may be perpetuated. The attorney of King County, Washington, has ten deputies. Recently a violation of law was brought to his notice, the informers promising him over their

to make affidavit in proof necessary. The office with a deputy of the prosecutor's office as to how far he could proceed without being prosecuted, and was told according to this minor official that proof sufficient for conviction was rather difficult to obtain.

Here is a plain encouragement of wrong doing by the prosecutor's office, whose policy should be the opposite particularly in giving advice both from a moral and an economic standpoint. With increasing crime, no wonder taxes increase. Shall we keep officials of this kind in office or will the voters and tax payers make one reason for not increasing taxes very plain?

## POSTAL SAVINGS A SUCCESS

"The Tacoma Postoffice ranked twenty-first in the United States and second in Washington in postal savings deposits at the end of the fiscal year June 30th. The four offices in the United States that have over \$1,000,000. on deposit are New York with \$4,400,000., Chicago, \$2,300,000., Brooklyn, \$1,500,00., and Boston \$1,100,000. The four offices in the state having over \$100,000. on deposit are Seattle, \$341,000; Tacoma, \$317,000; Roslyn, \$106,000., and Bellingham, \$100,000. Tacoma showed an increase in deposits during the year of 6 per cent., a gain of 4 per cent. In the number of depositors which on June 30th aggregated 1,986. The average account of the Tacoma postal savings depositor has increased from \$137. in 1912, to \$157. in 1913, and \$160. in 1914.

\$38,420. of deposits have been converted into United States Postoffice bonds.

Deposits may be made at South Tacoma Station from 8 a. m. to 6:30 p. m. and at the Main Office from 8 a. m. to 8 p. m., Saturdays until 9 p. m.

Cash or United States Government checks will be accepted.

Depositors may send deposits by mail or personal representative, a form being provided to cover such cases.

Withdrawals may be made at any time during office hours given above. F. L. STOCKING, Postmaster, Tacoma

## HORTICULTURE AT PANAMA PACIFIC INTERNATIONAL EXPOSITION.

At the Panama-Pacific International Exposition the lover of flowers and of gardens and orchards will be able to stroll among the most wonderful winter-to-winter gardens ever displayed at an exposition. By means of three seasonal re-plantings, the gardens and courts will be kept in a state of unending bloom—a thing never before attempted at an exposition. Indeed the whole exposition—an opal city of color—will be set down on a Persian rug of harmonious and enduring tints. This will appeal to the lover of the beautiful on his aesthetic side; and on the practical side the new and improved species from the world over, there displayed, will be no less alluring and uplifting than the rest of the \$50,000,000 show place; for each new flower and fruit is an ideal visualized, even more than is the statue or the bejewelled Travertine marble palaces which these plants frame and embellish. Many of these exhibits, from practically every country in the world, will be given up largely to the newer and perfected species and varieties of plants and fruits. Also in this department there will be many displays of growing plants and fruit trees with gardeners and expert orchardists at work; the object being to make of the horticultural display an up-to-date school of methods and processes.

## FAIR DATES.

September 21-26—Pendleton, Ore., Umatilla County Fair.  
September 21-26 — North Yakima, Wash., Washington State Fair.  
September 22-25—Eugene, Ore., Lane County Fair.  
September 22-25—Toledo, Ore., Lincoln County Fair.  
September 22-23—Fossil, Ore., Wheeler County Fair.  
September 22-24 — La Grande, Ore., Union County Fair.  
September 22-26 — Moscow, Idaho, Latah County Fair.  
September 23-26—Myrtle Point, Ore., Coos and Curry County Fair.  
September 23-25—Scio, Ore., Linn County Fair.  
September 23-25—Forest Grove, Ore., Washington County Fair.  
September 23-26—McMinnville, Ore., Yamhill County Fair.  
September 23-26 — Prineville, Ore., Crook County Fair.  
September 23-25 — The Dalles, Ore., Wasco County Fair.  
September 24-25-26 — Astoria, Ore., Clatsop County Agricultural Fair.  
September 24-26—Klamath Falls, Ore., Klamath County Fair.  
September 28-October 3—Salem, Ore., Oregon State Fair.  
September 29-October 4 — Western Washington Fair, Puyallup Wash.  
September 29-October 3 — Lewiston, Idaho, Lewiston-Clarkston Fair Association.  
October 1-3 — Condon, Ore., Gilliam County Fair.  
October 5—Salt Lake City, Utah, Salt Lake, Utah Fair.

## MANITO PARK, TACOMA

Very large lots at acreage prices, on street car line within 5-cent limit. Water, electric light, gas and phones ready for connecting. A good proposition for any one retiring from strenuous farm life and who wishes to keep chickens and a cow. Write for particulars and prices.

Real Property Department,  
Northwest Horticulturist,  
Box 1604 Tacoma, Wash.

## WASHINGTON STATE FAIR

North Yakima, Sept. 21-26

Those interested in dairy and other live stock will find this fair attractive. It is a good place to come for practical co-operative ideas. Excursion rates from all points. See your local agents. Premium list on request.

J. E. Shannon, Sec.,  
North Yakima, Wash.



October 5-10—Colfax, Wash., Whitman County Fair.  
 October 8-9-10—Moro, Ore., Sherman County Fair.  
 November 16-21—Spokane, Wash., Spokane National Apple Show.  
 November 25-28—Walla Walla, Wash., O.-W. R. & N. Corn Show.  
 November 30-December 5—Lewiston, Idaho., Northwest Livestock Annual Show.  
 December 7-12—Portland, Ore., Pacific International Livestock Exposition, Union Stock Yards.

### EVAPORATION OF APPLES

(Continued from front page)

Last year a fruit grower bought a commercial oat-sprouter from the Poole Seed and Implement Co., and used it successfully for drying fruit, and subsequently for sprouting oats for the fowls.

#### Kiln Evaporators.

For large orchards these are usually two stories high, the central portion being 20x40 feet which contains the floors where the fruit is prepared. The wings on each side which contains the kilns where the fruit is dried, are each 20 feet square. The apples are carried to the second floor by means of an elevator and dumped into a large bin, and from there drop through funnels to the paring table on the first floor. The paring and slicing is done by machinery and the apples are again elevated to the second floor, placed in another bin until enough is ready to spread over the kiln floor to dry.

An evaporator of this kind was built in Wayne County, N. Y. has a capacity of 300 bushels for 10 hours. The cost was:

|                    |         |
|--------------------|---------|
| Building .....     | \$1800. |
| 5 parers .....     | 60.     |
| 1 slicer .....     | 37.50   |
| Engine .....       | 450.    |
| 2 furnaces .....   | 150.    |
| 1 bleacher .....   | 75.     |
| 1 chopper .....    | 8.      |
| Installation ..... | 100.    |

Total of ..... \$2,860.50

Excluding the building and an engine for operating the machinery the cost of the kiln is not heavy. Whether the evaporation is small with only one kiln or large with several of them the most satisfactory size of kiln is about 20 feet square. This is convenient so far as preparation of enough fruit is concerned, the heat can be well regulated, made sufficiently intense and evenly distributed drying the fruit uniformly.

The kiln consists essentially of a floor made of slats and placed over a furnace room or over a system of steam pipes. The floor is usually built from 10 to 12 feet above the floor of the furnace room. Provision is made for regulating the heat by means of small openings at the base of the walls. If the air becomes too hot the current should be faster. In frame-built evaporators the walls are usually lined with asbestos paper to lessen the danger of fire, or they may be plastered. Double walls are better to keep up an even temperature and to increase the efficiency of the plant. The height of wall above drying floor should be about 6 or 7 feet. The hot air escape is through the hip part of the roof in the form of a tower extending from 3 to 8 feet above.

The kiln floor is constructed of strips, usually of poplar or bass wood, seven-eighths of an inch thick, 1 inch wide on top surface and half inch wide on lower side. These strips are laid one eighth to one fourth inch apart on the upper surface.

On the North Pacific coast but very little apple evaporation has been done. The ordinary prune

dryers have been used to good advantage. The principle employed is the same except trays are used which are made of metal screen and the evaporators are built to suit the handling of these trays most expeditiously. There are several styles the one in most common use of late years is that known as "stack dryer." One of the principal points to observe in the construction of a large dryer is that of getting a maximum quantity of product of uniform high quality at a minimum cost.

#### Paring Tables and Mashines.

There are two general plans of construction. One consists of a single long table common to all the machines; the other, individual tables, one for each parer.

Where several hand parers are used they are commonly placed on opposite sides of a relatively wide table, through the center of which, between the two rows of parers, is a sluice 10 or 12 inches wide and as many inches deep. An endless belt the width of the sluice covers its bottom. This belt works on rollers and is operated by means of a crank at the outer end. As the apples are trimmed they are thrown into this sluice, and the helper who attends to the bleacher fills the crates or trays in which the fruit is handled by turning the crank which moves the belt forward, carrying with it the fruit which has been placed thereon. By this means all the trimmers contribute to the filling of a single tray, thus making it possible to get all the fruit into the bleacher in the shortest possible time after it is pared. This is considered essential in order to make the highest grade product. Such a table as this is especially adapted to small evaporators which are run entirely by hand power.

Paring machines are made for operating either by hand or power. The more recent patterns have two, or even three, forks for holding the apples while they are being pared. The attendant puts an apple on one of the forks while one on another fork is being peeled.

The number of bushels which can be pared in a given time of course varies with the size and condition of the fruit, but 70 or 75 bushels for a day of ten hours (or even more if the fruit is of good size and the machine is speeded up to its limit) is not an unusual amount for a good power machine.

The hand machines are equally complete and satisfactory in their working. Under favorable conditions an experienced operator will pare 60 or more bushels a day if the fruit is not too small.

#### Bleaching and Slicing.

In order to make the fruit as white as possible, it is subjected to the fumes of burning sulphur. The apparatus in which the fumes are applied is called a bleacher.

The form and manner of construction vary greatly, as do most of the other appliances. The requisites are a perfectly tight compartment having a capacity commensurate with the size of the evaporator and the necessary facilities for burning the sulphur.

Perhaps the simplest form of construction consists of a box sufficiently long to meet the requirements, placed horizontally, and large enough in cross section to admit the boxes or crates in which the fruit is handled. Rollers are placed in the bottom, in which the crates rest, which per-

mit them to be moved along with but little friction. The crates are entered at one end of the bleacher, those previously put in being pushed along to make room for the following ones. The sulphur is usually burned immediately below the point where the fruit is put into the bleacher. A short piece of stovepipe is placed at the opposite end for the escape of through the bleacher. When the fruit has been carried through the bleacher, it passes to the slicer, which is located in close proximity to the bleacher.

There are several styles of slicers now obtainable which are operated by hand, foot or mechanical power. In general, they consist of a table in which a series of knives is so arranged that when the apples are carried over them by a revolving arm

they are cut into slices. In at least one type the apples are delivered to the slicing table by an attachment which works automatically.

The capacity of slicers varies somewhat, as does the industry of the men who operate them, but from 200 to 400 bushels for a day of ten hours may be expected of a good machine.

Small hand slicers which slice only a single apple at a time are sometimes used in the smaller evaporators.

Quartering machines are used instead of slicers, if it is desired to dry the fruit in quarters instead of slices.

#### Heating Apparatus.

Satisfactory results are so dependent upon the heating apparatus that this becomes one of the most important features of an evaporator.

In the smaller type of evaporators, where comparatively little is involved

## The Scandinavian American Bank

OF TACOMA

With assets of over TWO MILLION DOLLARS  
 invites your business

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 Distinctly a Farmers' Bank with thousands of farmers for its customers.

Farm Loans for Agricultural Development.

## For Going to Town

For hurry-up trips for repairs or provisions—

For those little hauling jobs that come up on every ranch—

For the Sunday visits—the holiday rides—and the neighborhood social affairs, nothing is handier than a

## Maxwell 25

It is a car to be useful, and at the same time to be proud of.

Being light, its up-keep cost is low. On a week's trip from Tacoma to Rainier National Park recently, one of these Maxwell 25's ran 248 miles on 9 gallons of gasoline. No water or oil was used except what was put in at the start, and no repairs or adjustments were made.

A fine hill-climber, and travels any kind of roads.

See the car on display here, or write us for literature and information.

### Maxwell-Gramm Service

Cor. 7th and C Sts.

Tacoma, Wash.



and the question of fuel does not enter seriously into consideration, almost any small stove commensurate with the size of the particular evaporator in question may be used.

In the larger kiln evaporators the matter is a more important one. Formerly, ordinary cast-iron stoves were used considerably, two or more of them frequently being required to heat a single kiln, but these have largely gone out of use. In their stead large furnaces are now most commonly used. These are specially designed for the purpose and are provided with relatively large fire pots, correspondingly large ash pits, and large radiating surfaces. As it is necessary to burn a relatively large quantity of fuel in a given time, the size of the grate is made with this end in view. For a kiln floor 20 feet square, or 400 square feet of surface, the grate surface is usually about 3 feet in diameter, containing from 5 to 7 square feet.

#### Apples Suitable for Drying.

Prices are governed not only by the supply but also by the grade. The cleanest, whitest fruit, that is well cored, trimmed, bleached, ringed, and dried, is most in demand. Carelessness in any particular injures the product.

Primarily the economic usefulness of an apple evaporator is through its utilization of windfalls and the poorer grades of fruit which can not be marketed to good advantage in a fresh state, and it is these grades that are most often evaporated. But the magnitude of the crop also influences the grade of the evaporated product in a decided way. In seasons of abundant crops and low prices for fresh fruit large quantities of apples that would ordinarily be barreled are evaporated and the grade of stock produced is correspondingly improved. On the other hand, in years of scanty crops, when all apples that can possibly be shipped are in demand at high prices, only the very poorest fruit is evaporated, as a rule, thus lowering the grade of the output.

The commercial grading of evaporated apples is based primarily on appearance rather than on dessert quality, and the fact that one variety may make a better flavored product than

another is not considered. As a rule, a product of high commercial grade can be made from any sort which has a firm texture and bleaches to a satisfactory degree of whiteness. A variety of high dessert quality, such as the Northern Spy, may be expected to make an evaporated product of correspondingly high flavor. The Waxen is a fine drying apple, also Gravenstein and Esopus, while such as the Ben Davis and Baldwin are fair.

#### Drying Process.

In the case of kiln evaporators, the sliced fruit is evenly spread on the floor to the depth of from 4 to 6 inches. A kiln 20 feet square will hold the slices of from 120 to 150 bushels of fresh fruit, depending upon the amount of waste in the apples and the exact depth to which they are spread on the floor.

If the fruit is in quarters or is dried whole, it may be somewhat thicker on the floor, since in these forms it does not pack down as closely as the slices do and hence does not impede the circulation of hot air through it if the depth is somewhat increased.

In tower evaporators and other types where the fruit is handled on racks the slices are seldom placed much more than 1 inch in depth. A rack 4 feet square will hold from three-fourths of a bushel to a bushel.

The fruit is generally put on the floor of the kiln as fast as it is sliced, and the fire is started in the furnace below as soon as the floor is filled, or, in many cases, before it is entirely covered.

The temperature maintained in kilns or other drying compartments, in actual practice is largely a matter of experience, not a factor governed by any definite standards or regulated in accordance with thermometer readings, as might be expected. In general, the object in view is to force the heat as high as possible without endangering the fruit. A probable temperature which has been suggested by some of the operators is 150 deg. F., or more when the fruit is first put into the drying compartment, dropping to about 125 deg. F. as the drying process nears completion.

A good kiln evaporator should dry a floor of slices in about 12 hours, 10

to 14 hours being the range of variation. Where the fruit is handled on racks the time required is much shorter as the fruit is usually only 1 or 2 inches thick on the racks. For slices, 5 hours is required with a range of 4 to 6 hours.

It is estimated that quarters will require from 18 to 24 hours in the average kiln, while the time for whole apples will range from 36 to 48 hours.

The fruit should be so dry that when a handful of slices is pressed together firmly into a ball the slices will be "springy" enough to separate at once upon being released from the hand. In this condition there will be no fruit, or only an occasional piece, that has any visible moisture on the surface. In a slice of average dryness, it should not be possible to press any free juice into view in a freshly made cross section of it. The general "feel" of the fruit, as it is handled, should be a soft, velvety, leathery texture.

When a quantity of fruit is considered dry enough, it is removed from the kiln and put in a pile on the floor of the curing room. Every day or two the pile should be thoroughly shoveled over to make uniform the changes which take place. Thus managed, the pile in a few days will become thoroughly homogenous. The pieces that were too dry will have absorbed moisture, the superfluous moisture of other pieces will have disappeared, and the entire mass may be expected to reach the condition above described.

#### PLANTING FOR POLLINATION

While selecting fruit trees through the agent or otherwise for either a commercial or domestic plant it is well to observe requirements for the intermixing of pollen. In the humid climate of the coast section it seems more difficult to get a good fruit set because of defective intermixing of pollen than where the atmosphere is drier at blooming time. Some years Bartlett pear trees seem to be more self fertile than in other years, and the same may be said of the large sweet cherries and of some of the apples. Considerable experimenting has been done of late years by station workers to solve the question of best varieties to plant together

for pollination.

The sum and substance of these experiments thus far determined, suggests the planting in close proximity of three or four varieties of the same class, which bloom about the same time.

In apples the Rome Beauty seems to be a good pollinizer for several other varieties, the Angouleme in pears pollinizes the Bartlett, and several other varieties. In cherries it seems necessary to have Bings, Lamberts, Royal Anns and one of the

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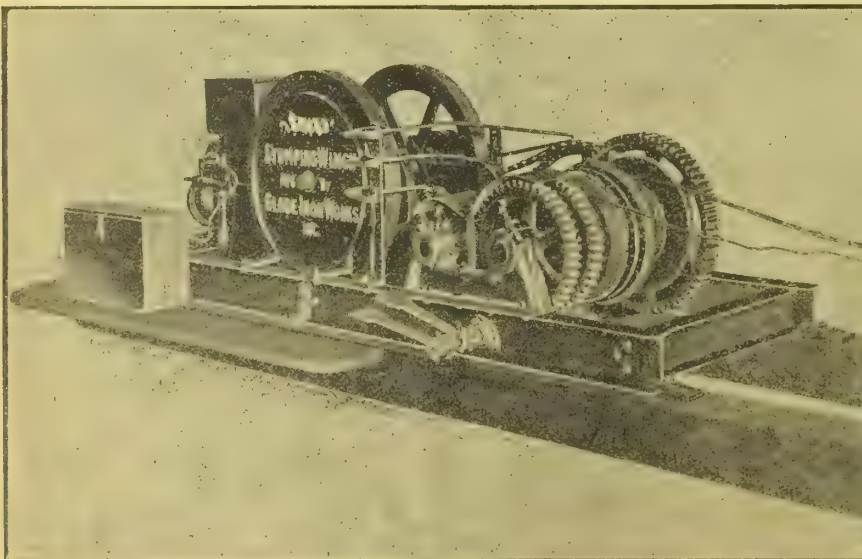


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**Fifteenth and A Streets, Tacoma, Wash.**





Dukes or Montmorencys planted in close proximity. The Northern Spy is a late bloomer, is self sterile and therefore another late blooming variety should be selected for interplanting.

The experiment station at Pullman, Wash., has a bulletin in preparation giving results of some of the pollination tests which was undertaken by Assistant Horticulturist, W. J. Young.

#### LARGE CABBAGE SEED CROP.

The cabbage seed crop this year of A. G. Tillinghast & Son, LaConner, Wash., was about 300 acres and the yield was excellent, about 200,000 pounds, a fine grade of plump seed. The principal part of the crop is sold to Eastern seed firms, and represents a small fortune. The cabbage magot is becoming a serious pest, but is kept under control by applying a solution of creosote, carbolic acid and water, about a pint being poured around each plant through a hose attached to a tank on a wagon hauled between the rows for the purpose.

It is necessary to go through the field to repeat the operation several times during the season.

Mr. Tillinghast is experimenting with numerous classes and varieties of seeds. The new garden pea Laxtonian, which originated in England, is very prolific, with large pods, grain of even size and promises to become one of the popular late varieties. The seed crop generally is of good quality this season.

#### RASPBERRIES NOT SUMMER PRUNED

The raspberry plant finds an especially favorable climate in most of the State of Washington. The crops produced are usually far above the average for the United States. The plants are extremely vigorous and productive and the quality of fruit produced is the best.

The practice of summer pruning does not seem to be well adapted to this plant. The vines grow tall, often reaching a height of seven to nine feet, and if cut back in the early summer, will branch and send out good strong limbs. If pruned a little later in the summer the tendency is to cause the vines to winter kill and suffer to such an extent that the crop is greatly lessened the following year.

Tests along this line at the Experiment Stations of Washington indicate that the best returns will be obtained by giving thorough, clean cultivation and doing all of the pruning in the winter time. Some growers report fair success with summer pruning, but the general indications are that summer pruning will result in injury to the plants, while in a very few cases it resulted in definite benefit to the plants or to the crop produced.

Some patches have been practically killed by the late summer pruning.

O. M. MORRIS,  
Horticulturist.

#### HOW TO MAKE PURE GRAPE JUICE

The best way to do it is to select only clean, well ripened fruit, and by selecting certain varieties, most any flavor may be had. Most any device like a cider press may be used for squeezing out the juice, or they may be crushed by hand. If a light colored juice is desired, place the grapes in a bag and press out the juice or let it drip through. Heat the

juice to 175 degrees, F., but never above that as it will have a cooked taste. But if not allowed to go above 175 degrees it will have the delicious taste of ripe grapes. The bottles or other receptacles should be sterilized, by dipping in hot water before putting in the juice. Cover the stoppers for the bottles with paraffine or sealing wax to aid in keeping out the air. Grape juice put up in this manner does not contain any alcohol, but is simply the pure essence of the grape without the seeds and skins, and may be kept indefinitely.

Apple juice is made in a similar manner.

#### COAST APPLE CROP.

According to an estimate by the Northwestern Fruit Exchange, apple crop of Washington is 6,363,000 boxes or more than that of Oregon, California, Idaho and Montana combined, the total of all these Pacific Coast States being 10,710,000 boxes. Even if Eastern states and the foreign markets do not require much of our apple crop, the territory west of the Missouri river ought to consume a crop of this size without the markets being overcrowded.

#### STORAGE FOR FRUIT.

Handling apples for storage is the subject of Bulletin No. 72, of the State College, Pullman, Wash., by W. J. Young. Among his suggestions for those who build store houses on the farm are to have ventilators which can be opened at night and closed during the day admitting the cool air near the floor while another series of ventilators carries off the warm air through the ceiling and roof. If the walls are carefully insulated such storage houses keep fruit in good condition for some weeks and are very useful as temporary storage for the apples until they can be graded and packed.

Storing for several months, apples should be kept at a uniform temperature as low as possible without freezing, which is in practice about 31 or 32 degrees.

The air in the storage house should be fairly moist to check evaporation and prevent shriveling, though actual dampness induces rot and apples should not be stored where moisture condenses upon the surface of the fruit.

Scald is the name applied to the brownish discoloration which often appears in the skin of certain varieties, especially toward the close of the season. It appears to be due to the death and oxidation of the superficial cells. It is confined to the skin and does not effect the quality of the apple, though the appearance of the fruit is injured and its commercial value is therefore lessened. Varieties differ in susceptibility to the scald. It is usually most troublesome on green or yellow fruit, and in red apples appears first on the less highly colored side. Immature, poorly colored, and over-ripe fruit is especially subject to scald. Delayed storage in warm weather and high or uneven storage temperatures promote scalding. To reduce scald to the minimum, develop mature highly colored fruit and store promptly at a low even temperature.

The usual behavior in storage of most of the varieties of importance in the state is indicated in a general way in the following notes. The varieties are listed in approximately

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the order of season though it should be born in mind that various factors of environment and methods of handling may modify the season of a variety to quite an extent.

**Yellow Bellflower.** Season October or November to January. Cold storage limit March. Improves in color in storage and usually does not scald. Does not stand heat well before storage and goes down quickly. Often loses in quality and becomes mealy. Shows bruises badly.

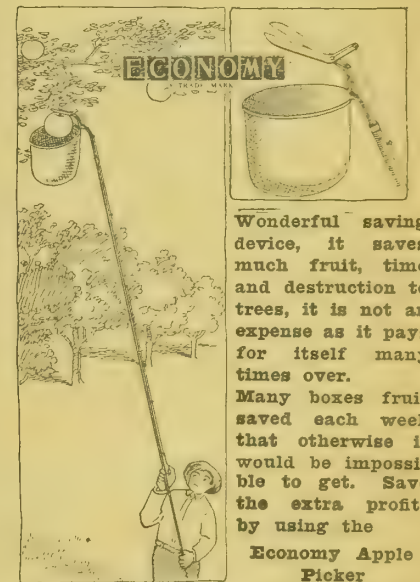
**McIntosh.** Matures unevenly, hence is an uneven keeper, often showing considerable loss quite early in the season. Does not stand heat well before storage and goes down rather gradually. Loses in quality and shrivels. Season same as Yellow Bellflower.

**Grimes.** Season November to January. Cold storage limit March. Does not stand heat well before storage and goes down quickly. Scalds badly after midwinter. May shrivel and lose in quality and firmness.

## ECONOMY

(TRADE MARK)

### APPLE PICKER



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Many boxes fruit saved each week that otherwise it would be impossible to get. Save the extra profits by using the

Economy Apple  
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Wanted to hear from owner of good farm or unimproved land for sale. Send description.

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**Delicious.** Season same as Grimes. Keeps with little loss, but goes down quickly after deterioration begins. Loses in quality and color. Meakness begins at the core and spreads outward to the surface.

**Jonathan.** Season about with Grimes, but keeps better. Goes down gradually. Loses quality and shrivels. Does not scald but is very subject to Jonathan fruit spot, which often appears quite early in the storage season.

**Winter Banana.** Season November



to February. Cold storage limit April. Stands heat fairly well before storage and goes down gradually. Scalds, loses in quality and color, and often shrivels. Keeping quality seems to be considerably influenced by the environment.

**Tompkins King.** Season variable; about with Winter Banana. Often considerable loss early in the season. Stands heat fairly well before storage, but goes down quickly after deterioration begins. Loses in quality, scalds, and becomes mealy.

**Monmouth (Red Cheek Pippin).** Season about with Winter Banana, but seems better adapted to cold storage than that variety. Sometimes shows considerable loss early in the season. Goes down quickly. Usually does not scald, but loses in quality and becomes mealy.

**Missouri Pippin.** Season midwinter. Cold storage limit April or May. Stands heat well before storage and goes down gradually. Often softens and scalds.

**White Pearmain.** Season same as Missouri Pippin. Goes down gradually. Does not scald badly, but loses in quality and becomes mealy.

**Wagener.** Season same as Missouri Pippin. Does not stand heat well before storage and goes down quickly. Loses in quality and color and may become mealy. Scalds very badly after midwinter, especially if poorly colored. Scalds quickly after removal from storage.

**Esopus (Spitzenburg).** Season varies but averages a little later than Wagener. Often goes down quickly, but stands heat fairly well before storage. Shrivels or becomes mealy and often bitter in the skin, but does not scald nor lose noticeably in quality until late.

**Stayman Winesap.** Season November to March. Cold storage limit May. Stands heat fairly well before storage and goes down gradually. Loses firmness, becomes mealy, and scalds badly late in the season.

**Lawver.** Season about with Stayman Winesap. Stands heat well before storage and goes down gradually. Sometimes becomes mealy.

**Rome.** Season December to March. Cold storage limit June. Stands heat well before storage and goes down gradually. Color improves in storage. Usually does not scald but may develop Jonathan fruit spot late in the season. Loses in quality and becomes

mealy.

**Ben Davis.** Season January to April. Cold storage limit July. Stands heat fairly well before storage and goes down gradually. Retains color well but sometimes scalds slightly late in the season. May shrivel or become mealy. Keeps well after removal from storage.

**Gano.** Season same as Ben Davis. Stands heat well before storage and goes down gradually. May lose color and scald late in the season and often shrivels or becomes mealy.

**Arkansas (Black Twig).** Season and behavior in storage similar to Ben Davis, but much more subject to scald.

**Winesap.** Season about with Ben Davis, but not so reliable a keeper late in the season. Stands heat well before storage and goes down gradually. Scalds unless well colored and may lose in color and firmness and become mealy.

**Arkansas Black.** Season spring. Often keeps well until July or August. Does not scald if well colored, but the color may become dull in the season. Goes down gradually. Sometimes shrivels.

**Yellow Newtown.** Season spring or late winter. Often keeps until August. Keeping quality much modified by environment. Probably does not stand heat before storage as well as most late varieties. Goes down very gradually. Scalds late in the season.

Immature, partly colored fruit is poor in texture and quality, tends to wilt and scald, and seems to offer little resistance to decay. Over-ripe fruit tends to mealiness and physiological disintegration. A warm summer and fall tends to overmaturity and poor keeping unless the fruit is picked and stored very promptly. Overgrown fruit lacks firmness and does not keep so well as medium sized firm textured apples. Better keeping quality results if the fruit is left until it is well grown and fully colored but still firm. This is known as the hard ripe stage. The seeds are brown and the stems tend to separate readily from the fruit spurs in picking. When varieties of different season are grown it is customary to pick them in order of maturity.

#### WESTERN WASHINGTON FAIR.

The Western Washington Fair, Puyallup, September 29 to October 4th,

## THE DRAIN TILE QUESTION SETTLED

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inclusive, showing a steady growth, will be "Bigger and Better." It is the Fair that makes good. Their attendance last year was about 60,000. Do you realize that there are in the neighborhood of 750,000 people within a radius of 50 miles of this Fair ground? That is one reason why a successful Fair is held here.

This year the exhibits promises to be larger and better in all departments. Good horses, cattle and hogs are being entered. The poultry department under the supervision of Fred A. Johnson will probably be the largest and best fall show in the northwest. Wm. Coats, poultry judge, of Vancouver, B. C., made the remark last year, "No doubt the Western Washington Fair had the champion fall fair poultry show of the Pacific coast and was handled far better than any poultry show I ever attended." As to the fruit and vegetable departments, under the general supervision of Deputy State Horticulturist, Henry Huff, promises to far surpass any previous attempt.

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County exhibits are expected from a much greater number of sections of the State than heretofore. The association and special prizes are going to bring out some fine individual exhibits in both the fruit and vegetable departments. The floral department including potted plants and cut flowers will be very superior.

The schools are making great effort to bring out creditable exhibits, and it is anticipated that the educational department will be a fair within a fair.

The ladies' department. Needlework, art, culinary, canned goods, and etc., under the supervision of

the Ladies' Auxiliary of the Association probably surpass any fair west of the Rock Mountains.

The automobile exhibit in the fine exhibition hall erected for this department last year will be an eye opener if you are in any way interested in automobiles, motor cycles, bicycles and supplies see this exhibit.

In the Better Babies Department, lectures will be given by doctors and nurses. The care of the children, physical and mental development will figure in the judging contest in this department of best crops.

J. P. N.

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The state of perfection of the Low Voltage Electric Lighting Systems has proven a boon to the suburban resident and farm resident districts where it is impossible to obtain the high voltage service from municipal or service corporation, and the immense demand for this class of lighting service in the past few years shows that people living in the isolated districts are desirous of having every convenience that their more fortunate neighbors in the city enjoy. There have been a great many installations of various sizes of lighting system made and the demand is increasing steadily.

There is no reason why every home throughout the country should not have the convenience of electric lighting as the cost of complete installation is within the reach of the average person. It is considered good insurance as everyone knows that fire in isolated districts is one of the most dreaded dangers that can come to one where there are no fire-fighting facilities. In addition to this, it is clean, instantly at one's command, saves many hours of disagreeable labor for the household and gives a far more brilliant light than any other system of lighting.

A recent installation made by the Racine Boat & Auto Co., Seattle, Wash., of a Dayton 30 volt lighting system at the country home of Mr. C. E. Armstrong, located at Manitau Beach, Bainbridge Island, Wash., is one of the most complete and up-to-date installations and gives the owner every convenience that he would have were he living in the city.

Mr. Armstrong, who like many others, is fond of having something to do, and whose hobby is raising chickens, has the most complete poultry yards. His building consists of a three story structure twenty-five feet wide by three hundred and sloping ground so that the second sixty-five feet long situated on and third stories which are used for roost and scratching pens during wet weather, can be connected to the various yards so that the full capacity of 2500 chickens can be given the run of these yards. The first story or basement is used for store room and feed; also the lighting system is installed at this point and the engine operates both the lighting generator and the water pumping system.

Suitable switches are installed so

that lights can be had instantly at any place in the building or throughout the entire structure. At the residence the regulation city light requirements are complied with and give the use of electric coffee percolator, vacuum carpet cleaner and other appliances, all of which add comfort and pleasure through this system of lighting. The much increased demand shows that it has come to stay.

### AGRICULTURAL EXHIBITS AT SOUTHWESTERN FAIR.

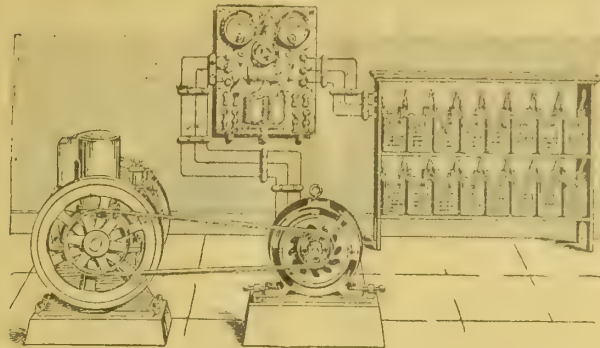
The agricultural exhibits at the Southwest Washington Fair was of exceedingly choice quality. The superintendent L. A. Degeler assembled what was considered the most complete and best exhibit of agricultural products in the hall that he has been able to secure in the past six years time that he has been in charge of this division. He had, according to the Chehalis, Bee Nugget, 27 varieties of oats, 20 of wheat and 13 of barley, arranged separately, the purpose being to furnish information to farmers and visitors who are interested in growing better varieties of grains for specific purposes. In Mr. Degeler's department he has seven interesting varieties of macaroni wheat that have produced a yield that is little less than remarkable. The seed is secured from the department of agriculture at Washington, D. C., and came originally from the new Crimean country where macaroni wheat is grown commercially. While it is generally presumed that macaroni wheat is a dry land wheat, Mr. Degeler's demonstration shows that it will do as well or better here than anywhere else. Also there is shown a splendid sample of corn wheat. There is in Mr. Degeler's department a wonderful collection of hemp, flax, buckwheat; beardless, hullless barley; rye, eight feet and one inch in height; timothy six feet in height; remarkable display of vetch, which with the extensive introduction of the silos on the dairy farms in this section, will become more and more valuable as a forage crop. Various specimens of alfalfa, peas, kale, corn and in fact practically everything that is of importance to the man engaged in general or special farming and stock raising.

### THE DAIRY BARN.

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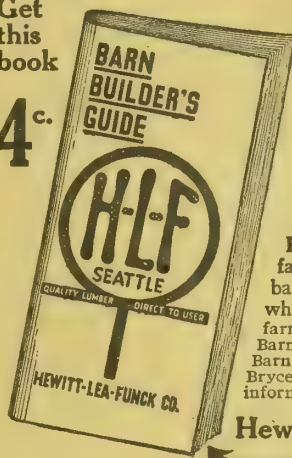
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A complete line of Fruit, Shade, Ornamental nursery stock. Guaranteed true to name. My nursery stock is free from disease and pests; first-class in every respect. Extra large roots, also large in calibre. Any one wishing to set in large lots will get the benefit of wholesale prices. Also a choice lot of prune trees, 6 to 9 feet in height, which I will sell at reduced prices. It will surprise you in getting my price list before buying elsewhere.

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**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nelis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

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## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously YOUR FRUIT, POULTRY AND EGGS

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation

923-5 Railroad Ave.

CHAS. UHLEN

SPOKANE, WASH.

## NURSERY CATALOG FREE

Full of helpful suggestions to make your place beautiful.—It's up-to-date, instructive. Please mention this paper and write to,

**J. B. PILKINGTON, Nurseryman**  
Portland, Ore.



air and furnish breeding places for flies should not be near the cow stable.

The silo may be connected with the stable by a feed room, but this room should be shut off from the stable by a tight door. This is convenient and also prevents silage odors in the stable except at feeding time. After the silage has been fed the stable can be thoroughly aired before the next milking period.

An ideal site for a barnyard is on a south slope which drains away from the stable. If the baryard is inclined to be muddy, it may be improved by drainage and by the use of cinders or gravel. A clean yard is a great help in keeping the cows from becoming soiled by mud and manure.

Very few farm buildings constructed 15 or 20 years ago meet the sanitary requirements of to-day. Bank barns are generally dark and damp, as the light is often excluded from one or more sides, thus making the stable difficult to keep clean. Stables which have basements open on one side for the manure furnish a breeding place for flies. Barns which have many exposed beams, braces, and ledges on which dust may lodge are undesirable. In these old types of buildings little or no attention was paid to proper ventilation and distribution of the light. Many of them, however, can at small expense be remodeled to meet all sanitary requirements.

Construction of the barn may be less important than careful methods in handling milk when the keeping down of bacterial content of the milk is considered, but the barn construction may be such as to lighten the labor necessary to keep the barn and its equipment in a clean condition.

The stable should have a hard floor which can be readily cleaned; for this reason a dirt floor is undesirable. A cement floor is easily cleaned and prevents waste of the liquid manure; it is liable to be cold, however, and therefore extra bedding is required for the cows to lie on.

The gutter back of the cows should be large enough to hold the droppings; with a width of 16 to 18 inches and a depth of 7 inches are usually sufficient. The gutter should incline so as to drain readily, unless the liquid is taken up by absorbents. Types of stalls and mangers are best which present the least possible surface for collecting dust and dirt, and the least obstruction to the circulation of air. Stalls of wood have many flat surfaces and cracks which are difficult to keep clean and in case of outbreaks of disease are not easy to disinfect thoroughly. Stalls made of metal pipes are therefore preferable. A swing stanchion is usually preferred, as it allows the cow plenty of freedom. A low, smooth manger without sharp angles is easy to keep clean. If the cows are tied, facing the center of the barn, the walkway behind them should be 5 feet or more in width so the walls will not be soiled by spattering from the gutter and the manure carrier.

The most common defect in dairy stables is a lack of cleanliness, cobwebs on the ceiling and manure on the walls are too common in such places. The dairyman must not allow cobwebs, dust or dirt to accumulate if he expects to produce the highest grade of milk. With a tight, smooth ceiling and smooth walls without ledges, this is not difficult. White-

wash should be freely applied at least twice a year to both walls and ceiling as it helps to purify the stable and to keep it light. An abundance of light is necessary; 4 square feet of glass per cow is generally sufficient if the windows are well distributed and not obstructed in any way. If the stable is located with its length north and south it receives the purifying benefit of both the morning and afternoon sun.

Every cow stable should have a system of ventilation to keep the air fresh and pure and the cows comfortable without exposing them to injurious drafts. If the smell in the stable is disagreeable at any time, it indicates that the ventilation is deficient. At least 500 cubic feet of air space should be provided for each cow. Farmers who desire to provide proper ventilation in cow stables can obtain information on this point by applying to the Dairy Division, Department of Agriculture, Washington, D. C.

#### SUPPLY OF CATTLE HIDES.

By George K. Holmes, U. S. Department of Agriculture, in Agricultural Outlook

About one-third of the cattle hides treated in the leather manufacturing industries of this country five years ago were imported from other countries. In the meantime the number of cattle on the farms and ranges of the United States has diminished, the consumption of hides has increased, and a present European war has affected the international trade in hides, so that the industries that tan and otherwise treat cattle hides and use their leather are facing uncertainties in the supply of raw material.

According to the census report on the leather manufacturing industries, 20,516,332 cattle hides were treated in 1909, of which 13,764,686 were taken off the cattle of this country, leaving approximately one-third of the consumption to be supplied by foreign countries. The cattle slaughter of that year, according to the census report on agriculture and on slaughtering and meat packing, was 13,611,422, but this number did not include an apparent 150,000 cattle that died from accident and disease.

The imports of hides into this country are reported in pounds and not in number of hides, and no fairly good estimate of such number can be made, for the reason that the imported hides are both dried and wet, or salted, with no separation in the report; and furthermore, the hides are derived from many countries, the cattle of which vary in average size, and some buffalo hides are included. In the year ending June 30, 1909, the imported cattle hides weighed 192,252,000 pounds, to use a round number, a quantity that far exceeded the previous record, and in the next year the imports amounted to the remarkably high total of 318,002,000 pounds. Apparently this resulted in an overstocking of the market, because in the following year, 1911, the imports fell to 150,028,000 pounds. For 1910 and 1911 combined, the average yearly imports were 234,015,000 pounds. The import record continued to be broken year by year, and cattle hides weighing 251,013,000 pounds were received in 1912, after which 268,042,000 pounds were received in 1913, and 279,769,000 pounds in 1914.

From 1909 to 1914 the imported cat-

## ASK YOUR HORSE!

about Mica Axle Grease. If he could talk he would tell you that it makes the load pull a lot easier.

## MICA AXLE GREASE

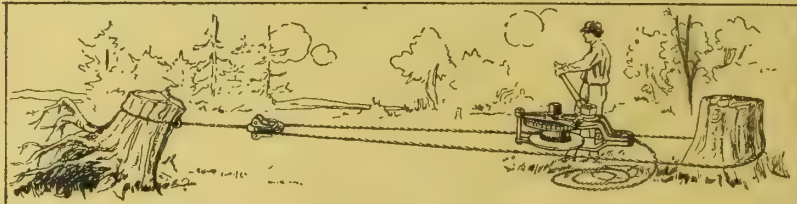
would be a good axle grease even though it contained no mica. But the ground mica makes it still better. It fills up the microscopic pores or crevices on the surface of spindles and resists friction and heat. It will pay you to use Mica Axle Grease. Dealers Everywhere.

Standard Oil Company  
(CALIFORNIA)

MICA AXLE GREASE



## Samson Stump Puller



One Man's Hand Clears Your Land with the SAMSON. It's a Real Hand-Power Machine that can be operated and easily moved around by ONE MAN. Holds 100 feet of cable on the drum; moves a stump 100 feet without changing the rigging; has two speeds. Mr. Varney, of Poulsbo, Wash., says "The SAMSON pulled 30-inch second growth fir stumps out of hard clay soil on high ground." Mr. Calkins says, "The stumps I pulled with the SAMSON averaged 3 feet." Let the SAMSON pull your stumps. Hand and horse Stump Pullers from \$30 up. Write now for our Booklet No. 2. It's free. **SAMSON STUMP PULLER COMPANY**  
1112 Western Avenue Seattle, Washington

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ALL TIRES SOLD AT WHOLESALE PRICES

Here are a few bargains in used cars. Ask for special prices on others and on trucks.

One 1912 Chalmers, 5-passenger, self-starter—\$975.

One Franklin, 5-passenger, in A1 condition, guaranteed—\$800.

One Franklin, 5-passenger, guaranteed—\$750.

One 3-passenger Ford—\$250.

One 1912 Cadillac, electric lights and self-starter—\$1,000.

The above cars are guaranteed to be just as represented by us.

Terms if desired.

OVERLAND - PACKARD - HUDSON New cars and supplies complete always on hand.

**Pacific Car Co.**

REMEMBER THIS IS THE HOUSE OF SERVICE

North Second and G Streets  
(Point Defiance car line)

TACOMA, WASH.

## CLEAN VETCH SEED

Offered for fall sowing. Write stating quantity wanted and get price at once.

GIBSON BROS.  
East Sound, Wash.



the hides increased 45.5 per cent. in weight, and the number of cattle on farms declined from 61,804,866 in 1910, as ascertained in the census, to 57,592,000 as estimated by the Bureau of Crop Estimates of the Department of Agriculture, a decline of 8.4 per cent. It may be roughly computed from the foregoing figures that the imported cattle hides have reached over two-fifths of the consumption, but less than one-half. The supply from foreign countries, therefore, has been a matter of increasing moment, independent of conditions of war.

As the trade statistics are expressed, the various countries that supply hides to the United States often vary much in importance from year to year. The reason for this is largely a roundabout and indirect transportation in the ships of the United Kingdom, Germany, France, and other countries. According to the record in this country, 25 per cent. of the weight of hides imported in 1913 came from Argentina, 15.5 per cent. from Canada, 11 per cent. from Mexico, 8.5 per cent. from European Russia, 7.5 per cent. from France, 3.7 per cent. from Germany, 3.2 per cent. from the United Kingdom, 2.7 per cent. each from Uruguay and the Netherlands, 2.6 per cent. from Belgium, 2 percent. from Columbia, 1.7 percent. from Venezuela, 1.1 per cent. from Cuba, and comparatively insignificant quantities from other countries. The countries mentioned supplied, on the face of the record, about nine-tenths of the imports of cattle hides.

#### CLOVER SEED IN OREGON.

Within recent years the growing of clover for seed has become quite an important industry in western Oregon. The 1913 seed crop was probably in excess of 2,000,000 pounds, and the greatly increased acreage in 1914 would normally have largely increased the total production for 1914. But there has been a great amount of damage from the clover midge, working the head, and the clover root borer, affecting the crown of the plant. A considerable portion of the crop intended for seed will not be worth harvesting for that purpose, and as it has been allowed to get beyond the proper stage of ripeness for hay, will have very little value for that purpose.

The damage is not at all uniform. Where some fields are practically ruined, only a few miles away the fields generally appear to be in good condition. Quite a little hulling has already been done, and yields of six and seven bushels of red clover seed per acre have been obtained. The alsike variety seem to yield even better than the red. In Linn County, which is probably the heaviest clover seed producing county in the State, dealers estimate that, notwithstanding the increased acreage, the production will probably be not more than one-half that of last year.

Farmers Bulletin U. S. Dept. of Agrl.

#### ALFALFA IN IRRIGATED ORCHARDS.

Owners of irrigated orchards, who desire to secure maximum results from their trees, make some use of the soil between the rows, and at the same time keep up the fertility of the orchard land, will be interested in the following comments by Professor W. S. Thornber, quoted from the Twice-a-Week Spokesman Review, of

Spokane, Washington:

1. Alfalfa adds nitrogen to the orchard soil.

2. It breaks up the subsoil better than dynamite. If alfalfa cannot get through the subsoil then dynamite it.

3. It makes the soil hold water better—gives the water a deeper reservoir.

4. It prevents the orchard from drying out. Oftentimes on soil which has not grown alfalfa the crops are utilizing only the upper few inches of soil. Alfalfa enables the roots to feed down for several feet into the ground. It effects economy in the use of water for the irrigator; for by storing the late fall, winter and early spring precipitation it makes less heavy demands for irrigation water in the dry portions of the year.

5. Grown in the orchard by some plan, alfalfa may stunt the trees. Properly used it does not. It enables the roots of the tree to get further down into the ground, thus giving them a larger feeding area. It checks the late growth of wood and may thus prevent damage caused by freezing unripened wood.

6. It makes fruit color earlier in the fall. This is an important element in marketing apples in the foreign markets. Alfalfa apples color from one week to 10 days earlier than those given clean cultivation. The color is heavier, more solid than is obtained under other conditions.

7. It improves the quality of the apple—gets away from pithiness, for example.

8. You can set it in the orchard in such a manner that the first cutting, or the first two cuttings will pay for the cultivation of the orchard during the year. It will furnish in the orchard grazing for hogs or poultry.

#### GROW RED CLOVER.

Well Adapted to Washington Where Annual Rainfall is Twenty Inches or More.

1. Better adapted to short rotation than alfalfa.  
2. Enriches the soil; adds humus.  
3. Yields large first cutting and fair second cutting.

4. Is rich in protein—hence, splendid crop for balanced ration.

Its introduction on the moister wheat lands means more live stock, richer soil, heavier yields of grain, less waste lands, more and better farm homes, says George Severance, Agriculturist of State College, Pullman.

In the coast section, clover is not only the basic pasture and hay crop for dairymen, but it is becoming a source of much revenue to those growing the crop for seed.

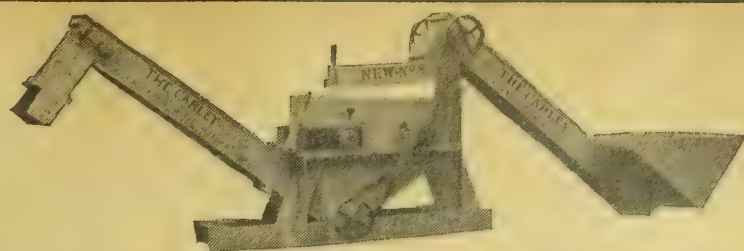
Since the war in Europe, clover seed growers in this country have the entire home market to supply.

This fall after the September rains is a good time to sow the seed. Prepare the seed bed thoroughly beforehand by deep plowing and repeated disking. Coast farmers will do well to prepare and grow clover for seed as fast and thoroughly as possible.

#### SEALING A SILO.

Numerous methods are employed to seal the silo, from the time crops are put in until ready for use. Mr. Nis. Ostergaard writes in Wallace's Farmer that he used three-ply roofing paper with good success, describing his method as follows:

After leveling off the surface,



#### The Carley Roller Feed Mill

In Seven Sizes  
THE LATEST AND BEST MILL ON THE MARKET TODAY

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Colfax Iron Works, Inc.  
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Successors to CARLEY BROTHERS

## CLOVER SEED

VETCH TIMOTHY  
RYE ETC. OVER 99  
PER CENT PURE

We have the seed for early fall seeding, over 99 per cent. pure.

Don't forget we handle **CONKEY FLY KILLER**, Conkey Lice Powder and all of their Poultry Remedies.

**BARTLETT'S** Calf Meal, the perfect milk substitute.

**CYPHER'S** Incubators and Brooders.

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### Seattle Seed Company

SEATTLE, WASH.

## \$82 A WEEK EARNING CAPACITY

### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment

Will saw 20 to 40 cords of wood per day at a cost of \$1.00. **PULLS ITSELF** up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for **FREE** catalog containing full description with testimonials from enthusiastic users. **WRITE TODAY.**

Reierson Machinery Co.

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Operated By 1 Man

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## Shrubs - Plants - Vines - Trees

Having taken over the entire stock of the Richland Nursery, we are prepared to fill orders for all kinds of Flowering Shrubs, Vines, Clarke's Seedling Strawberry Plants, European Grape Vines and Shade Trees in choice grades. Please let us know your needs early and get a copy of our catalog and prices.

**BREITHAUPT NURSERY CO.**

C. F. Breithaupt, Prop.

Kennewick, Wash.

Headquarters for

## OREGON CHAMPION GOOSEBERRY

and Perfection Currant

Attractive prices made now for Advance Orders

Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear.

Correspondence solicited.

## Portland Wholesale Nursery Co.

301-302 Stock Exchange Building.

PORTLAND, OREGON

The Place to Buy your Supplies

## Clover, Timothy and Vetch Seed

Strictly high grade both in purity and vitality in actual tests. Ready for early fall sowing. Please submit estimate requirements. Now is a good time to plant more thousand-headed Kale in the Coast section. 50c per pound, post paid.

**AABLING-EBRIGHT SEED CO.**

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WHOLESALE COMMISSION, FRUITS AND PRODUCE

Phone: Main 59. SEATTLE, WASH. 1111 Western Ave.  
Goods handled strictly on commission. Prompt returns our specialty.  
Wire or write us at any time for market quotations.  
References: National Bank of Commerce, Seattle; Merc. Agencies; Shippers on Pacific Coast.

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brought up two rolls, rolled them out, and cut the paper in shape to fit the silo, lapping it about four inches. I found that the paper, by the aid of its own weight and the moisture from below, settled close to the surface of the ensilage, and in doing so kept the moisture from evaporating, as the air could not come in contact with the ensilage.

The paper was laid down loosely, without being nailed or otherwise fastened, only that the rows were lapped over each other by about four inches, and the ensilage kept fine. The upper half-inch of it was black, but below that it was as fresh as the rest of it farther down. The 5th of May, I quit feeding ensilage, and sealed up what I had left, using the same paper, and in spite of the dry and hot weather, the ensilage under the paper is as good as ever.

### SULPHUR AND FERTILITY.

Prof. F. C. Raimer of the Southern Oregon Experiment Station concludes from experiments and observations that crude sulphur in powdered form, known as flowers of sulphur, has a beneficial effect on some soils.

Two plots were fertilized with flowers of sulphur; one plot with iron phosphate; and check plots receiving no fertilizer were left alongside the fertilized plots. The plots receiving flowers of sulphur, iron sulphate, and superphosphate had double the yield of the unfertilized plots and the alfalfa had a better and more thrifty stand.

These experiments were conducted in the Rogue River Valley of Oregon and they are being repeated on various types of soil in that valley to ascertain, if possible, whether all will make similar response to the use of sulphur, the most profitable amounts to apply per acre, and the effect of continued applications. Professor Reimer is of the opinion that sulphur will prove of less value on the most fertile soils, and states that the most economical form in which to purchase sulphur is the crude powdered sulphur, which may be purchased at two cents per pound.

Whether or not sulphur has any effect on the control of diseases and insects in plants and trees is a problem unsolved and which some of our experimenters might do well to determine.

### GRASS SEED FOR PASTURE MIXTURES.

In choosing a pasture mixture the conditions to consider are the life of the mixture and condition of the soil; that is, whether the soil is dry, moist, or poorly drained. The aim is to choose a mixture that will cover the ground completely, and will give a succession of grasses for nearly continuous pasture. This gives a greater number of grasses to choose from.

Pasture mixtures suggested for different types of soil, showing the number of pounds of seed to the acre for each kind of grass in each mixture:

#### Wet Land

|                         |   |
|-------------------------|---|
| Italian rye-grass ..... | 6 |
| Red top .....           | 2 |
| Timothy .....           | 2 |
| Alsike clover .....     | 2 |

#### Moist Land

|                           |   |
|---------------------------|---|
| Italian rye-grass .....   | 4 |
| Orchard grass .....       | 4 |
| Meadow fescue .....       | 3 |
| Kentucky blue grass ..... | 1 |
| Red top .....             | 1 |

|                           |   |
|---------------------------|---|
| Red clover .....          | 4 |
| White clover .....        | 4 |
| Upland—Permanent          |   |
| Italian rye-grass .....   | 6 |
| Orchard grass .....       | 4 |
| Kentucky blue grass ..... | 2 |
| Red clover .....          | 4 |
| White clover .....        | 2 |
| Upland—Temporary          |   |
| Italian rye-grass .....   | 6 |
| Orchard grass .....       | 6 |
| Red clover .....          | 6 |

The red clover and Italian rye-grass will largely die out by the end of the second year, then the other clovers and grasses will occupy the land.

Every piece of land has its own individuality, and is a separate problem. By studying the local conditions some changes may be made in the recommended mixture to improve it for the special soil conditions. The natural grasses will aid in this.

The amount of seed to sow per acre will depend largely on the condition of the seed bed, and the extent to which the seed can be covered. If conditions are such that every seed will germinate and be covered, the minimum amount of seed should be used. If the seed bed is poorly prepared double the amount of seed will be required to secure a good stand.

If the pasture can be used for hay or silage the spring after sowing and not pastured until the soil is quite firm and the plants well established, the pasture will be better for it. Western Washington Exp. Station.

### TILE FOR DRAINAGE.

The Northwest Horticulturist, justly esteemed as it is among its many readers for its numerous excellent features, has never given publicity to any subject with more possibilities of money-making or money-saving for the farmer than that of Farm Drainage.

In the Middle Western States, where the writer resided until recently, the importance of this subject is more generally realized than here where only a start has been made toward the vast amount of farm drainage work that could be done with profit to the owners.

All of us have seen the advantage of tile drainage. The stronger root development results in greater drought-resisting qualities. Drained land is ready for springplanting much earlier than undrained land. Tile drainage is crop insurance.

In Iowa we found that the increased yield from tile drained land often paid the entire cost of the material and labor the first year. The increase was always clear profit after the second year.

Mr. Kaufman is undoubtedly right in his statement that good hard burned clay tile is the preferable material to use for farm drainage. It is safe and sure, for no acid or alkali in the soil can injure it.

His experience with cement tile failing in the ground is not peculiar to Whatcom County or to the State of Washington. Many such failures have occurred in the State of Iowa and failed cement tile was replaced with clay tile.

I have seen some drainage systems built of cement tile that seemed to be satisfactory in every way, but the large number of failures shows cement tile to be an unsafe material with which to experiment. The possibility of losing an entire crop beside the cost of the tile and labor is too

## BEAUTIFY YOUR HOMES

We are this season enjoying an unusually good trade on shade and ornamental trees, vines, shrubbery, etc. For years the western home-builder has devoted all his energy to creating a productive plant. Today his thoughts are turned more to home-making in the fullest sense of the term. This requires a well disposed arrangement of properly selected trees, vines and shrubbery, and this need we are well prepared to supply. We have devoted much time and effort to securing the proper class of ornamental stock for all sections of the West and Northwest, and the wisdom of this policy is exemplified in our largely increased business in this line, together with a good volume of orders for deciduous fruits, berries, grapes, etc.

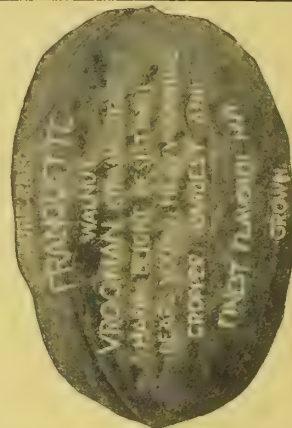
Our salesmen cover practically every city and hamlet west of the Rocky mountains. If they fail to see you, address us, giving indications of your wants, and we will be pleased to reply in detail, together with catalog.

We have a well equipped landscape department in charge of a qualified landscape architect, whose advice is to be had for the asking in connection with any order we book.

Our stock is, as usual, unsurpassed. It is grown on clean, new volcanic ash soil, far distant from old orchards or other sources of contamination. It is clean, well rooted, hardy and splendidly matured. We solicit your patronage, and guarantee you satisfaction.

All transportation charges prepaid to destination on every purchase.

WASHINGTON NURSERY CO.,  
Toppenish, Washington  
Salesmen Wanted.



### Have You Read This?

"At my home on Nob Hill, I have two Walnut trees which I purchased from your Company. They are now thirteen years old; were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from those two trees last fall. My grocer pronounced them superior in size and flavor to California nuts."

E. W. Brackett, North Yakima.  
Space here forbids much explanation, but if you will write us, we will gladly explain the difference between the famous VROOMAN PURE STRAIN FRANQUETTE WALNUT and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc., in the West. ORENCO trees are planted from coast to coast because they are known to be always—dependable—first class.

FILBERTS — Good plants of such leading varieties as Barcelona and du Chilly.

### OREGON NURSERY CO.

Orenco, Oregon

Competent salesmen wanted.

### AUCTIONEERS

Years of experience, thoroughly posted.

Geo. A. Gue, Ridgefield, Wash.  
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W. H. Ralph, Nez Perce, Idaho.  
Write for dates.

## Nursery Stock

### FRUIT TREES

### SMALL FRUITS

### ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY  
F. J. Rupert, Mgr.

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### AUCTIONEER

### WM. ATKINSON

Vancouver Blk., Vancouver, B. C.

Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

### ACME REALTY COMPANY

401 Equitable Bldg, Tacoma, Wn.

## Small Fruit Plants

at

## Wholesale Prices

|              |              |
|--------------|--------------|
| Blackberries | Gooseberries |
| Raspberries  | Currants     |
| Loganberries | Dewberries   |
| Strawberries | Rhubarb      |
| Asparagus    |              |

Write for prices.

## F. H. Burglehaus

SUMNER, WASH.

## Lilly's Vetch Clover Grass Seed

### For Fall Planting

These important crops call for careful and studied seed selection. Cheap, inferior seed is expensive at any price. Lilly's best seeds are

99% Pure

—and we can furnish all seed tested for purity and germination. Don't take chances. Buy the best. We make a specialty of grass and clover seed and stand ready to back up our claims for supplying the best seed possible to get.

Sold through dealers in Lilly's Trade Marked Sacks

Fall Catalog Ready  
Mailed free on request.

THE CHAS. H. LILLY CO., SEATTLE



great to justify taking any chances even if the cost is somewhat less than that of clay.

On this subject of clay tile prices, my inquiries have not brought the same results as related by Mr. Kaufman.

I have been rather surprised, considering the higher cost of labor and the poor quality of coal here, to find how nearly Clay Drain Tile prices here approach those of Iowa. At least one firm, the Denny-Renton Clay and Coal Co., of Seattle, have offered to sell good clay drain tile, in quan-

ties of a carload or more, at \$15.00 for three-inch and \$20.00 for four-inch. These prices are lower than have prevailed in the past due, they say, to increasing demand.

We all have a natural desire to buy as cheaply as possible, but we should not lose sight of our own interest in using a safe material because local conditions and the absence of a large demand make the cost of good tile a little higher here than in the East.

W. E. CLARK.

R. F. D. Box 17-A.  
Port Blakeley, Wash.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### IRRIGATION CONGRESS AT CALGARY.

"One day of the International Irrigation Congress, which is to be held in Calgary, October 5 to 9 this year, is to be devoted to a trip—free to delegates—covering a 160 mile journey through the irrigation block lying to the east of Calgary, and a visit of inspection to the Horseshoe Bend dam near Bassano, which stores water for the largest individual project on this continent." This will be one of the most entertaining and interesting features of this year's meeting.

Special railway rates will be available on all important lines. Delegates and visitors will also have an opportunity of a journey through the Canadian Rockies and a visit to the scenic points in Western Canada and Western United States. One of the most delightful will be that to Banff—the playground of Canada.

The agricultural and horticultural exhibition in connection with the Congress, will draw together some of the best irrigated and dry farm products of Canada and the United States, especially when it is considered that the first district prize will be \$500 in cash the largest cash award ever offered at any exhibition in Western Canada. There are five other awards in this class, ranging from \$300 in cash to \$50.

The program is outlined briefly in the Official Call showing the subjects for discussion to be of international importance. Colonization, the regulation of water rights and community upbuilding are some of the subjects, and in these there is much to be learned by those on both sides of the International boundary.

J. S. DENNIS,  
Chairman Local Board,  
Calgary Alta, B. C.

### IRRIGATION EXPENSE.

#### Getting Your Money's Worth of Water

How to get the most for the least is the problem that has held man's attention since the beginning of things. No matter what you are buying, no matter whether the expenditure be time, physical effort or money, the problem remains practically the same. Now, when the dry season is on, your problem perhaps is water, for irrigating purposes, and you may have under consideration your first pumping plant, or you may be contemplating new pumping apparatus in place of old. Your problem is: "How can I get the most water for the least money?"

Engineers and power experts have studied the subject, and many methods of water pumping have been

are by the use of a direct-connected electric motor or a distillate engine. These are the types of equipment in most common use.

In considering their comparative advantages it is found that the installation cost of the two equipments is about the same. The chief consideration therefore, is to determine which tried. All reports seem to indicate that the two most practical methods is the more convenient and which the less expensive to operate and maintain.

Let us assume, as an example, it is desired to irrigate a sixty acre ranch requiring eighteen irrigations of one and one-third inches each. This will necessitate a pump capable of delivering seven hundred and fifty gallons a minute. A fifteen horse-power distillate engine should be used to drive a belted pump of this size. The cost of distillate consumed as fuel, at eight and one-half cents per gallon, would be \$150.02 for the eighteen irrigations. In the case of an electrical equipment a ten and six-tenths horse-power direct connected motor is necessary. The cost of the current at two cents per kilowatt hour will total \$195.70 for the eighteen irrigations. These figures are based on a fair average of prevailing prices. They show that the distillate engine makes possible a saving of \$45.68, or over twenty-three per cent of the electrical cost.

The electrical method had the advantage that it is cleaner and easier to operate. Balanced against this, however, is the distinct disadvantage that the source of electrical power is generally many miles distant. The chance discontinuance of this power, through break in the transmission line, or for any other reason, leaves the irrigation plant useless and the owner helpless to remedy the condition. When equipped with a distillate engine, the farmer or rancher has his pumping operations entirely under his own control and in practically every instance where mechanical difficulties arise they can be remedied locally and at once.

If it is desired to move the pumping location even to some distant point on the ranch, the distillate engine admits of much easier and cheaper transfer, by reason of the fact that the outfit is complete in itself and does not require the installation of such a medium as the electric supply wires.

A good type of distillate engine, given proper attention, and lubricated with a grade of oil of known value, such as is advertised in this Journal, will prove a most valuable and economical source of power for many other purposes besides irrigation.

# ZEROLENE

Keeps the  
Motor  
Cool



Dealers everywhere. Ask our nearest agency about delivery in bulk.

**Standard Oil Company**  
(CALIFORNIA)

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Established at present location for 25 years. Nurserymen for four generations is the record.

**APPLE TREES**—All leading varieties 4 to 7 feet stocky trees: Yellow Transparent, Gravenstein, Wealthy, Wagener, King, Olympia, Baldwin, Winesap, Winter Banana, etc.

**PEAR TREES**—A fine stock of Bartlett, Anjou, Bosc, Angoulene, Comice and others; also Dwarfs.

**CHERRY TREES**—A choice lot of Lamberts, Montmorency and other kinds.

**PLUM AND PRUNE TREES**—Strong Italian, French, Sugar Bradshaw. **SMALL FRUITS**—Gooseberry, Currants, Blackberry, Raspberry, Loganberry and other classes. Strong plants.

**ORNAMENTALS**—Roses affording satisfaction, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce and other coniferous, and small evergreens.

Write for prices and complete list and please mention this paper.

**JOHN A. STEWART & SON, Christopher, Wash.**

## Milton Nursery Co.

**Pear, Cherry, Apple, Prune and Peach**  
**Full Line Shade and Ornamental Stock**

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

**A. MILLER & SONS, INC.—MILTON, OREGON**

Salesmen wanted.

A Catalog and Special  
Prices on Request.

## The Puyallup Nursery

**Hardy Ornamental  
Nursery Stock a  
Specialty**

Be sure and visit our nursery when attending the Western Washington Fair in this city September 29 to October 4, 1914.

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Shipping season begins in October.

Everything worth while in Roses, Gladioli, etc. Send for list.

**Specimen Grounds, 702 PIONEER AVENUE, EAST  
A. LINGHAM PUYALLUP, WASH.**



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WOODSON

### MOTHER.

She is the one to whom we go, in joy, in sorrow or despair;  
She is the one who comforts us, with willing heart and tender care.  
She is the one whose smiles we cherish, whose hopes we fondly treasure too;  
Her smiles and hopes have taught us something, that only smiles and hopes can do.  
She is the one whose heart was bravest at times of sorrow and oft' alone;  
And be those hands now old and wrinkled, we'll bless them for they made our own.  
To have our sweetest, tenderest love, there ne'er was made another;  
Then let us bow with reverence here, in due respect to mother.

—Jennie Gordon.

### COURTESY IN THE HOME

It is to be regretted that individual courtesy in the household is at so low an ebb. We treat our guests with favor and bestow upon them every mark of polite attention; but the minute they are out of the house we slip back into the old ruts, and we treat those about us with an indifference that borders on contempt. Not that this is intention; rather, it is the result of carelessness, a failure to realize that the polite attentions, "the little things," count so much to those we love as to some outsider who becomes a member of the family for a day.

If one would be a successful host one should be a successful parent or brother or sister, and courtesy is an inevitable requisite in both cases. The home life is a training for the larger life in which we meet other men and discuss other interests. If at home we learn to say "thank you," and mean it, we will not forget to say it to others at the proper time.

### SOCIAL INJUSTICE

After all, it is easy for us who are safely removed from the struggle and stress of the toilers, to condemn the radicals or label men and movements with a name which smacks of the plague or the pestilence. It was a crowd like that which said of Jesus, "He hath a devil," and pined in the ready cry: "Crucify him."

The one thing we are all apt to forget is, that anarchy and kindred movements grow out of a soil made stony and hard by injustice. They are symptoms of a disease in the body social, and the ill cannot be cured by jailing or hanging or crucifying the men who feel the hurt most and cry out in their agony.—Edward A. Steiner.

### RURAL SOCIETY

Discussing Rural Social Centers in a bulletin of the Madison, Wisconsin Experiment station, C. J. Gaplin makes the following suggestions which are applicable also to the northwest.

The social problem of the farmer seems to be how to overcome the inevitable handicap of a social deficiency in the very nature of his occupation, so as to extend his acquaintance with men; and secondly how to erect social institutions on

the land adequate to reinforce his individual personality so as to enable him to cope with his perplexities.

The first plain necessity is for every farm family to extend its personal acquaintance and connections from its own dooryard out to every home in its neighborhood and then out to every home in its community. This must become a settled policy for social preservation, a sacred determination, a sort of semi-religious principle in home, neighborhood, and community. In village and city, daily pressure brings contact. In the country, rational procedure must take the place of pressure. This places rural acquaintance-making of a large scale character on the same high moral level with the great idealisms which move men when bare economic compulsion is wanting.

### Children Must Know Many Children.

Occasions must be created, plans must be made to bring people together in a wholesale manner so as to facilitate this interchange of community acquaintance. Especially is it necessary for rural children to know many more children. The one-room district school has proved its value in making the children of the neighborhood acquainted with one another. One of the large reasons for the consolidated and centralized school is the increased size of territorial unit, with more children to know one another and mingle together.

### Unity of Homes in Social Basin.

It only remains for some rural mind once vividly to conceive of the entangling unity of all the farm homes that stand on the same slopes of the social water-sheds draining into one village or small city—the unity of these farm homes and those village homes. When this vivid idea in once visualized so that a whole rural community shall see its oneness in the same degree—at least in no greater degree than that in which the inhabitants of a modern city see their oneness and organize for protection and development, then we may look for rapid rural organization. Meanwhile the process of wide and deep systematic acquaintance will surely though slowly crystallize into organization, and out-crops of rural social institutions will appear on the land.

### WATER SUPPLY IN FARM HOMES

The water supply is one of the most important factors in the home life on the farm. In the average country home the water is taken from the well, put in the pail, carried to the kitchen, put in the kettle, turned from the kettle to the dishpan, emptied from the dishpan to the slop pail and emptied in the yard. A member of the State College staff, Pullman, Wash, figures that this makes about six times the water is handled. Two gallons weigh twenty pounds. Multiply this by six, average the amount used for laundry, cleaning, bathing, cooking, etc., and get some faint idea of the thousands of pounds per day a woman lifts in doing ordinary house work. Is it any wonder that the elasticity is gone from her step, the bloom from her cheek, and that the



## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

## Hardware for Farmers' Buildings

When building your barn, house or other structures it is your privilege to get the lowest cash figure and the highest specific quality. The natural question is WHERE? The answer MOHR HAS IT.

Air Tight Heaters, Kerosene Heaters, Stove Pipe, Etc.

Henry Mohr Hardware Co.

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## COPPER ORE PAINT

For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

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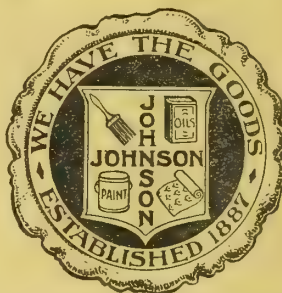
## Home Canning Outfit

Put up your surplus fruits and vegetables in your own home. Buy one of our home canning outfits, complete and ready for business. Small outlay, very little expense to operate; good profits. We also furnish cans, solder, labels and all other cannery equipment.

Canners Supply Co.

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## PEONIES

The popular and satisfactory flowering plant for the Northwest.

Our strong plants set in September or October will bloom next spring.

For complete information, send for a copy of our special peony catalog, free.

BEAVERTON NURSERY

Beaverton, Oregon.

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Better  
Baking

With  
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A Better  
Baking Powder



average farm woman is old at forty years.

It costs about \$250 to install a

## NORTHWEST GROCERY CO.

HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

Northwest Grocery Co.

13th and Commerce Sts.,  
Tacoma, Wash.

Oldest and Largest Mail Order  
House in the State.

**Billy Buster**

**SCHOOL SHOES**

ARE AS NEAR  
**WATER-PROOF  
WEAR-PROOF**  
AS SHOES CAN BE MADE

STYLES ARE  
PRICE IS  
FIT IS **RIGHT**

THEY ARE MADE IN SEATTLE  
FROM BEST LEATHER TO SUIT  
THE NEEDS OF HUSKY BOYS—  
JUST SAY  
"BILLY BUSTER"  
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IF HE CAN'T SUPPLY YOU,  
WRITE US AND WE WILL  
ADVISE YOU WHO CAN

**The Washington  
Shoe Mfg. Co., U.S.A.**



Best Glove values offered. Imported direct from Denmark. Sent prepaid anywhere in Northwest. Send for price list.

K. PETERSON,  
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## Sunshine Lamp 300 Candle Power FREE

To Try In Your Own Home  
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

**COSTS 1 CENT A NIGHT**

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.  
**SUNSHINE SAFETY LAMP CO.**  
214 Factory Bldg., Kansas City, Mo.





water system on the outlying farms, which will not only supply the house but the entire farm. Is this not better than paying the doctor and finally the undertaker?

The kitchen should be one of the pleasantest rooms of the house. Why not have a convenient place for two or three books or a magazine which can be looked at while waiting for something cooking?

The average woman wastes a great amount of time, energy and money by not knowing scientific methods of conducting the home, use of materials, the best things to buy, the season of the year to buy certain commodities in, the conservation of energy in doing the daily work, and the wrong mental attitude in regard to the daily duties.

#### MEAT AND VEGETABLE SOUP RECIPE

A wholesome meat and vegetable soup for a family of five.

One soup bone, weighing about 24 ounces, (1/3 meat) worth 10 cents.

After being washed it should be placed in a large kettle with three pints of cold water and heated for three hours when the bone and meat should be removed.

One-fourth of a small head of cabbage, one onion, one carrot, one large potato, two small tomatoes, a little flour seasoning, value 6 cents

Chop these vegetables and add to the soup. Boil the mixture for one hour, thicken slightly with a little flour and season with salt and pepper.

The home-made soup made according to the above recipe contains in addition to meat extractives, gelatin from the bone, some of the food elements in the vegetables, and a large proportion of the fat and meat of the bone.

While the purchaser of semi-solid meat extracts obtains two to three times the amount of meat extract that he does by spending the same money for bouillon cubes, these extracts also are not concentrated beef according to the analyses made by the Department's chemist. They contain from 45 to 65 per cent. meat extract, 15 to 25 per cent. water, 5 to 20 per cent. salt, and 10 to 20 per cent. of ash other than salt. The cost of meat extracts at retail is 45 cents for two ounces or more.

Fluid extracts of meat are even more expensive than the semisolid meat extracts, consisting of at least one-half water but selling at about the same price, volume for volume, as the semi-solid extract which contains more than 25 per cent. of water.

Commercial meat juice preparations cost from 50 to 75 cents for 2 ounces of liquid and are frequently merely dilute solutions of the semi-solid meat extracts. When the amount of food actually present in them is considered they are expensive articles of diet. In making them the protein (muscle-building material) which is pressed out of meat and is present in freshly made meat juice is entirely removed by the manufacturer in order to make a product which may be kept a long time without spoiling. Therefore, the most valuable food elements of the meat juice usually do not reach the consumer in these commercial products.

The bulletin contains cuts and tables illustrating the relative contents and food values of bouillon cubes, meat extracts, and home-made preparations, and may be had on ap-

plication to the Division of Publications, U. S. Department of Agriculture, Washington D. C.

**To Save Sugar.**—Plums, cranberries, gooseberries, or grapes will not take so much sugar if a little cooking soda is added before putting in the sugar.

#### Chow Chow

Take three quarts of small green tomatoes chopped fine, twenty-four small cucumbers, four red peppers, two large heads of cauliflower, three bunches of celery, one and one-half pints of small onions. Put in layers in a crock, with salt sprinkled between the layers and on top. Let stand for twelve hours, then drain off the brine. Cover with vinegar and water in equal parts, and let stand another 12 hours. Drain again and pour over one-half gallon of vinegar that has been boiled ten minutes, with four pounds of sugar, one pint of grated horseradish, one ounce of celery seed, one-half pound of mustard seed, one-fourth cup of whole peppers, one-half cup of turmeric, one-half cup of cinnamon. Let stand until cold and then add one cup of olive oil mixed with one-fourth cup of ground mustard.

**White Pickle.** Chop 12 large ripe tomatoes. Put 12 large cucumbers and 12 large onions through the meat grinder. Salt the cucumbers and onions and let them stand one hour. Strain off the juice, add the meaty part of the tomatoes and cover with vinegar. Season with two tablespoonfuls of sugar, two teaspoonfuls of celery seed, one teaspoonful of red pepper. Mix all the ingredients in the preserving kettle, bring to a boil and can and seal while hot—Household department, in Woman's World for September.

**Spider Corn Bread**—1½ cups corn meal; 1 teaspoon salt; 2 cups sour milk; 2 eggs; 1 teaspoon soda; 2 tablespoons butter.

Mix the dry ingredients. Add the eggs well beaten and the milk. Place the butter in a frying pan, melt it, and grease the pan well. Heat the pan and turn in the mixture. Place in a hot over and cook for 20 minutes.

**Corn Meal Muffins**—One-half cup corn meal; 1 cup flour; 3 teaspoons baking powder; 2 tablespoons sugar; 1 tablespoon melted butter; 1 teaspoon salt; Three-fourths cup milk, and 1 egg.

Mix and sift the dry ingredients; add the milk gradually, the egg well beaten and the melted butter; bake in a hot oven in buttered gem pans 25 minutes.

#### CANNING CORN ON AND OFF THE COB.

The following recipes for canning corn have proven both practical and economical for the housewife. The recipes have been worked out in the Department's canning kitchen and the products tested for nearly two years.

Corn has been put up in all types of containers, such as glass top, screw top, suction top, and tin cans. The method employed is the cold-pack method, the same as is now being used in the best commercial factories of the world, instead of requiring the laborious and tedious method of fractional sterilization of an hour each day for three consecutive days and lifting of the products in and out of the canning devices three times.



Not a  
mixture -  
but a straight  
run refinery  
product

## RED CROWN

The best gasoline  
the Standard Oil  
Company can make

## Quaker Trees

FRUITS  
ORNAMENTALS  
SHRUBS

A Fine Stock of Apples, Pears, Peaches, Plums, Prunes, Apricots and Small Fruits.

It is a good year to increase the ornamental planting. Thousands will come to the Pacific Coast seeking homes during the next few years. Do you wish to sell any part of your land, or your home place, or do you wish to encourage settlers who have some degree of taste and refinement? Then adorn your home with some ornamental plants, shrubs and trees. The cost is trifling compared with the actual value which may be derived. Our catalog contains valuable suggestions.

Write for catalog and price list today. State your requirements.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

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### Producers & Consumers Co-Operative Company

E. HAZELTON, Pres. & Mgr.  
1114-1116 Western Ave., Seattle, Wash. Tel. Main 3689.  
(1400 Farmers in our Membership)

We handle all kinds of farm products, making channels between producer and consumer as short and inexpensive as possible. If not a stockholder, write for our prospectus, also our wholesale provision list. State what you have to offer in fruit, potatoes, veal, pork and poultry. Please mention this paper.

The method now employed contemplates but one sterilization and turns out the product in better shape, with better color, texture, and flavor than the fractional sterilization method. By following these recipes and method

the family can have corn, either on or off the cob, throughout the year at a very reasonable expense of time, energy and money.

**Corn Off the Cob**—Select sweet corn ears of uniform size and proper



ripeness. If too ripe the corn will color while processing. (Processing is the canning term for sterilization or cooking). If not ripe enough much of the food value is lost in cutting the corn from the cob. Use either glass jars or tin cans. For market purposes and greater safety in transportation, use tin cans.

Remove husk, silk, shank, tips, and and injured or defective places. Blanch corn in boiling water or steam chest for from five to ten minutes. The time depends upon the stage of ripeness, size of ears, and degree of freshness. Remove the ears and plunge quickly in cold water.

Cut the corn from the cob with a sharp, thin-bladed knife. Pack well in glass jar or tin can; add hot water and a level teaspoon of salt to the quart or No. 3 can. Place rubber and glass jar top in place, not tight. If using tin, solder cap in place and fill vent hole, or seal completely. Process the corn from 180 to 240 minutes in the home-made or hot-water commercial bath outfits; for 1½ hours in the water-seal outfits; for 60 minutes when using from 5 to 10 pounds of steam pressure, with the steam-pressure canning devices, and 40 minutes when using the aluminum steam pressure-cooker outfit. After processing remove the jars, tighten covers, invert to test the joints and cool.

If using tin, inspect the soldered end caps for pin-hole leaks. Repair all leaks, allow to stand for 24 hours. If cans are still bulging at ends at the end of this time, one of two things is true—the pack is too full, or some live spores are still left in the can. If the latter, replace in sterilizer and process the second time from 30 minutes to one hour.

**Canning Sweet Corn On the Cob—** Blanch in boiling water 5 to 10 minutes, according to ripeness, size, and freshness; plunge quickly in cold water. Pack, alternating butts and tips; add just a little boiling water and one level teaspoonful of salt to each quart. Place rubber and top

and partially tighten. (Cap and tip tin.) Process 180 to 240 minutes in hot-water bath; 1½ hours water-seal outfit; 60 minutes under 5 or more pounds of steam; 40 minutes in aluminum pressure cooker. Remove jars, tighten covers, invert, and cool. (Heat up for table use in steamer, not in water. If corn seems flat or water-logged, it has been over-cooked or allowed to stand in too much water.)

Use one or two-quart glass jars if not needed for other products. Quart jars will hold two ears, 2-quart jars will hold from 3 to 5 ears, according to size of ear. Do not can large ears. Half-gallon or gallon tin cans with large openings should be used in the canning of ear corn when idle glass jars are not available. Gallon tin cans will hold from 6 to 12 ears. They should be graded to uniform size.

In high altitudes, 4000 feet and over, it will be necessary to increase the time requirements in the canning of sweet corn about 25 per cent., if water boils at about 202° Fahrenheit and even less.

In the average home a large number of glass jars are idle every year. The use of these idle jars is recommended, but if none are available, the most economical and practical containers are the half-gallon and the gallon tin can.

The gallon tin cans, including soldered-hemmed caps, will cost about six cents apiece, but they will hold six to twelve ears of corn, which is enough for a good-sized family. If the corn is removed from can and steamed for a few minutes, it cannot be distinguished from the sweet corn removed from the husk in midsummer. The corn can be heated in the container before opening to serve.

An ear of sweet corn on the average dining car and hotel a la carte service costs 25 cents. Considering this, canning corn on the cob for the market might prove a very profitable investment for a thrifty housekeeper and bring to her considerable pin-money.

## DAIRY DEPARTMENT

**Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.**

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### REFRIGERATION IN THE HANDLING OF MILK.

The U. S. Department of Agriculture has just issued an 89-page professional bulletin dealing with the application of refrigeration to the handling of milk. The bulletin, which deals in a technical and semi technical way with the many types of refrigerating apparatus, is intended to give information to owners and operators of small refrigerating plants, and especially those used in the various branches of the dairying industry. The bulletin also should be of interest to manufacturers of refrigerating machinery, in that it discusses fully modern methods used in the handling of milk and cream on a commercial scale.

Considerable space is devoted to the problem of cooling milk on the farm, and to the advantages of jacketing cans of milk while in transit. In this connection it is pointed out that the temperature of an un-

jacketed can rose 28½° in three hours, while one that was hair-quilt jacketed rose but 5½°, and one wrapped in wet burlap, 8½° in the same time.

This bulletin will be supplied free to those interested in refrigeration of milk so long as the Department's supply lasts. Thereafter it can be obtained from the Superintendent of Documents Government Printing Office, Washington, D. C., at a price of 10 cents.

### BACTERIA MULTIPLY RAPIDLY IN WARM MILK.

Twenty degrees of temperature make a great deal of difference in the rapidity with which bacteria multiply in milk, according to the dairy division of the department. There is a certain temperature which is most favorable for the growth of these tiny organisms. Below this temperature the growth is retarded; the lower the temperature the slower

## EXHIBIT

YOUR LIVE STOCK AT THE

# Western Washington Fair PUYALLUP

Sept. 29-30 and Oct. 1-2-3-4, 1914

Again Using the Old Slogans:

**"Bigger and Better and the Fair That Makes Good"**

The Live Stock, Horticultural, Machinery and Educational Exhibits will be Grand. 750,000 People Within a Radius of 50 Miles. Attendance 1913, 60,000. Send for Premium List.

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President

J. P. NEVINS  
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PUYALLUP, WASH.

## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

**J. D. ROSS & SON**

**Kent, Wash.**

### HOLSTEIN HEIFERS---Choice High Grade Stock

We are offering to sell 30 young Holstein cows, fall freshening; also a choice bunch of Holstein heifers out of registered bulls with dams on both sides great producers, bred to registered sires, will freshen in early spring. If you want something of this kind, tubercular tested, write for particulars at once and mention this paper.

F. F. FOLSOM,  
204 4th Ave., Kent, Wash.

### Holsteins For Sale--A. R. O. Breeding

We offer 12 females of the very best and most promising heifers raised here, five coming fresh this late fall and winter; also a young bull ready for service. All out of A. R. O. dams.

J. H. DE HOUGH & SON  
Twin Brook Stock Farm

Lynden, Wash.

### Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

### HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. H. Hollingsworth, LADNERS, B. C.

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington



is the growth. Bacteria that increase rapidly at 70° F. grow much more slowly at 50°, and at 40° grow hardly at all. Some kinds, however, tend to increase even at the freezing point.

In one test made by taking samples from a certain quantity of milk the sample kept at 68 degrees developed 242 bacteria at the end of 12 hours, and 3,574,990 at the end of 40 hours, while the sample kept at a temperature of 50 degrees developed only 15 bacteria at the end of 12 hours, and only 62 at the end of 40 hours. This illustrates the value of 50 degree temperature over the 68 mark keeping milk pure and sweet.

Many of the bacteria commonly found in milk produce no apparent change in the milk. Others may change the flavor without changing the appearance, while some of the most common types of bacteria cause marked changes in both appearance and flavor. In this class are included the bacteria which sour the milk by converting the sugar into lactic acid and those which form a sweet curd. Another type destroys the casein and albumin in the milk and causes putrefaction and bad odors.

The number of bacteria in milk depends, first, on the number of bacteria in the udder; second, on the amount of contamination from outside sources; and, third, on the rapidity of the bacterial growth. The rate of growth depends on the temperature at which the milk is held.

#### BLOWING AIR THROUGH HOT MILK OR CREAM WILL REMOVE GARLIC FLAVOR

The disagreeable flavor and odor left in milk when cows eat wild onion or garlic within four hours before milking, can be removed by blowing filtered and washed air through the milk for 30 to 60 minutes, according to the strength of the garlic flavor.

This conclusion, which is published in U. S. Department of Agriculture Farmers' Bulletin 608, shortly to be issued, is the result of a series of experiments made by the Dairy Division on methods of removing the garlic flavor which greatly lessens the commercial value of milk and cream.

To remove the garlic flavor successfully, however, the milk must be raised to a temperature of 145 deg. and a method devised to keep the milk from foaming when the air is blown through it.

#### COWS OF HIGHEST BUTTER RECORD

It is only of recent years that scientific methods of breeding and feeding have shown such great and definite utility records. The actual pounds of butter fat have been produced and there is no guess work about it. A study of the shape and breeding of the animals which have made these yields the kind of feed consumed and its cost is helpful to those who desire to make dairying practical and profitable. Following is a list of cows representing the Guernsey, Holstein, Jersey and Ayrshire breeds with their official yearly records of butter fat.

| Name and Breed                             | Pounds butterfat. |
|--------------------------------------------|-------------------|
| May Rilma, Guernsey .....                  | 1,073.41          |
| Banostine Belle DeKol, Holstein .....      | 1,058.34          |
| Pontiac Clothilde DeKol 2d, Holstein ..... | 1,017.28          |
| Sophie 19th of Hood Farm, Jersey .....     | 999.27            |

|                                           |        |
|-------------------------------------------|--------|
| High-Lawn Hartog DeKol, Holstein .....    | 998.34 |
| Colantha 4th's Johanna, Holstein .....    | 998.26 |
| Spermfield Owl's Eva, Jersey .....        | 993.25 |
| Eminent's Bess, Jersey .....              | 962.82 |
| Spotswood Daisy Pearl, Guernsey .....     | 957.38 |
| Jacoba Irene, Jersey .....                | 952.96 |
| Olympia's Fern, Jersey .....              | 937.83 |
| Miranda of Mapleton, Guernsey .....       | 927.16 |
| Creamelle Vale, Holstein .....            | 924.68 |
| Auchenbrain Brown Kate 4th Ayrshire ..... | 917.60 |
| Aralia DeKol, Holstein .....              | 913.86 |
| Lily of Willowmoor, Ayrshire .....        | 888.70 |

One of the Jerseys, Sophie 19th, has a second record of 931.97 pounds butterfat produced in one year. Although far down the list in butterfat, the Holstein, Creamelle Vale, holds the world's record for milk, nearly 11½ tons produced in 365 days. Lily of Willowmoor produced 22,106 lbs. milk in 365 days.

#### PUGET SOUND HERD HOLSTEIN SALES.

During the months of July and August, 5 males and 11 females were sold from this herd as follows:

Otto Hansen of Eveline, Wash, the fine young yearling bull "Sir Fayne Maud," his dam Wooderest Maud has a record of 25.93 lbs. butter in 7 days and at 2 years of age she held the world's milk record in class for 30 days. This bull's 3 nearest dams average 26.36 lbs. butter in 7 days.

James Doran, of Mt. Vernon, Wash., purchased two fine yearling heifers out of good producing cows, sired by Violet Blossom Sir Fayne, whose 15 nearest dams average over 25 lbs. butter in 7 days.

Judd Brothers, of Beverley, Wash., bought a Duroc Jersey boar, pig and a fine young bull "Sir Fayne Antje." This young bull's dam in a 15 lb. heifer, and his sire is Violet Blossom Sir Fayne.

G. W. Sanderson, of Lorane, Oregon, purchased for foundation herd 3 four-year old cows, one exceptionally well bred heifer and a bull calf five months old. He is sired by one of the best sons of De Kol 2nd Butter Boy 3rd, out of a 31.65 lbs. 4-year-old, a daughter of the great cow Johanna De Kol 2nd, granddam of Johanna De Kol Van Beers who holds the world's record for 120 days butter and was sold for \$7,000 last April at public auction. The dam of this bull calf bought in New York last winter, calved on the train enroute here looks a very promising candidate for a 30 lb. cow. Her grandsire is a full brother to the sire of Chimacum Wayne Boon.

The three young cows are all fine individuals, in the A. R. O. class, the heifer is sired by Quirinus Cornucopia, whose 2nd daughter to be tested has just completed a record of 22.48 lb. butter in 7 days, is still in test and will make over 35 lbs. in 30 days. She gave 78.8 lbs. milk in one day.

Mr. Geo. E. Hamilton, of Oregon City, Oregon, bought one A. R. O. cow and one heifer, a daughter of Quirinus Cornucopia. Her dam is a four year old daughter with a 19.6 lb. record of De Kol Plum. She is dam of De Kol Plum Copia 33.7 lb. butter in 7 days and sold at auction for \$1900. This young heifer is safe in calf to Sir Chimacum Wayne, the great young bull whose records of his dam and sires dam average: Butter 7 days 33.24, Milk 815.2 lbs.

C. L. Dudley, of Castle Rock, Wash.,

## Cream Separator Manufacturers Say

that two-thirds of all complaints about cream separators are due to faulty lubrication. That is because the close-fitting, fast-running mechanism of the separator demands a special oil—and most people use "just any old oil."

## Standard Hand Separator Oil

is made especially for cream separators and we know that it is "right" because our lubrication experts have made a study of separator construction and exactly adapted the oil to the requirements. It is just the right body. It doesn't "gum." Dealers everywhere.

**Standard Oil Company**  
(California)

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**  
Grandview, Wash. (Yakima County)

## CASH FOR EGGS

Highest market price. Guaranteed satisfaction. Prompt cash payment for each shipment. We are also in the market for cream.

**MILLER BROS. CO.**  
1532 Commerce St., Tacoma, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## Meadow Brook Farm

Breeders' of  
**Pure Bred  
Ayrshire  
Cattle**

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

**A. P. Stockwell, Aberdeen, Wash.**



bought the young bull Quirinus Pasma, sired by Quirinus Cornucopia and his dam is Lakeside Pasma with a record of over 20 lbs. butter in 7 days and 97 lbs. milk in 1 day.

W. W. Gallanger, of Port Stanley, Wash., got three heifer calves for the foundation herd of Holsteins. They are all well bred and will make a good start for Mr. Gallanger.

The Pine Creek Dairy Co., of Cheney, Wash., got the bull calf "Pine Creek Cornucopia." His dam is the well bred young cow which just completed a record at 4 years of age of 21.7 lbs. butter in 7 days and 86.8 lbs. in 30 days, and 9 gallons of milk in one day. His sire is Violet Blossom Sir Fayne.

Wm. BISHOP, Chimacum, Wash.

#### OREGON REGISTER OF MERIT JERSEYS

According to D. Brooks Hogan, Oregon breeders who will have placed in the Register of Merit by October first are:

|                           |    |
|---------------------------|----|
| J. P. Stump .....         | 9  |
| Frank Laughary .....      | 12 |
| G. G. Hewitt .....        | 12 |
| W. O. Morrow .....        | 4  |
| Ed. Cary .....            | 15 |
| W. S. Ladd Estate .....   | 5  |
| M. Dickson and Son .....  | 3  |
| Chas. Miller Estate ..... | 6  |
| —                         | —  |

Total .....66

This gives Oregon fifth place in number of Jerseys on test. Twenty head more would place her second. More than this number are said to be in sight for the Register of Merit before the end of the year.

#### THE TYSON HOLSTEIN HERD

Mr. Joseph Tyson, who came to the Yakima Valley some years ago from Iowa, is joining other Holstein breeders in making that part of Washington famous for quality of the breed.

In his herd is Tritoma Mutual Glen De Kol, a very showy and extremely well bred animal, sired by Mooie Mutual De Kol, sire of thirty-two A. R. O. daughters. One of the cows, Fairview Homestead Burke, according to the Rural Spirit, was put on a week's official test, but not until she had been driven overland to and from the State Fair, ten miles away. Even then, thirty days after freshen-

ing, she produced 585.5 pounds of milk and 29.3 pounds of butter, the highest record made in the Yakima Valley up to that time and it has only been beaten once since. Thirty-five pounds is fully expected at her next freshening. Two others have been given A. R. O. records. This spring ten more good cows were bought from Minnesota. They stood the trip fairly well and all promise big production.

Two years ago at the State Fair Mr. Tyson purchased from Wm. Todd the bull calf, Moxie Sir Johanna Fayne, and last year had the satisfaction of winning first in class and junior championship with him as if he might be a strong contender for championship honors. Fairview Homestead Burke has a bull calf that will show very strong.

Mr. McKelheer, a dairy breeder of wide experience and good judgment, is interested in and superintendent of the herd and farm. The cattle are looking well and will be shown at the State Fair.

#### EARLY'S JERSEY HERD

Mr. J. B. Early, of Grandview, Wash., enlarged his Jersey herd some time ago with a car load from northern Illinois. While keeping well up in the quality line of pure breeds and show stock Mr. Early insists on production at the pail and he is raising some good milk and butter producers.

Among his purchases in Illinois, according to the Rural Spirit, is the Imported cow, Hermit's Graceful Lady and Emanant Lad's Grace Cloud, both of noted breeding.

Oxford Lad's Flower, another of the importation, has produced two pounds of butter a day as a three-year-old. Her calf is of very fine dairy type and gives promise of making a great bull.

Eminent's Lassie, of his herd has grown into a very fine matron. She produced three pounds, one ounce of butter in twenty-four hours as a three-year-old. The herd will soon all be put on yearly official test and some big records are expected.

Mr. Early will show at the State Fair at North Yakima again this fall. He has recently been elected a member of the American Jersey Cattle

## Registered and High Grade HOLSTEIN CATTLE

While actual buying was a little quiet last month on account of the dry weather, the numerous inquiries coming show that dairymen will increase their herds owing to cheaper feed and higher butter fat. We are offering fresh and coming fresh cows that cannot fail to please buyers. Our young stock heifers and pure-bred bulls are developing in fine shape ready for the increased demand sure to prevail in the near future.

**H. S. ROYCE**

Savage-Scofield Bldg., A St.  
TACOMA, WASH.

Please mention this paper

## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow.

**E. R. BRADY**  
Satsop, Wash.

## Registered Guernseys For Sale

We Offer an Excellent Young Bull from Melba's May Prince and Imp. Chartreuse. The dam of May Prince produced 508 lbs. fat at 3½ years and the dam of the young bull is under A. R. test, with an average of 41.3 lbs. milk per day for 104 days to July 1, and 4.3 per cent. fat. We offer male calves of like breeding which can be obtained at lower prices now than several months hence.

Write for prices and further particulars. Terms to responsible parties.

**Augustine & Kyer**

115 First Street  
Seattle, Wash.

## Waikiki Farm

Breeders of  
JERSEY and Ayrshire CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

**IRA P. WHITNEY, Supt.**

Route 7, Spokane, Wash.

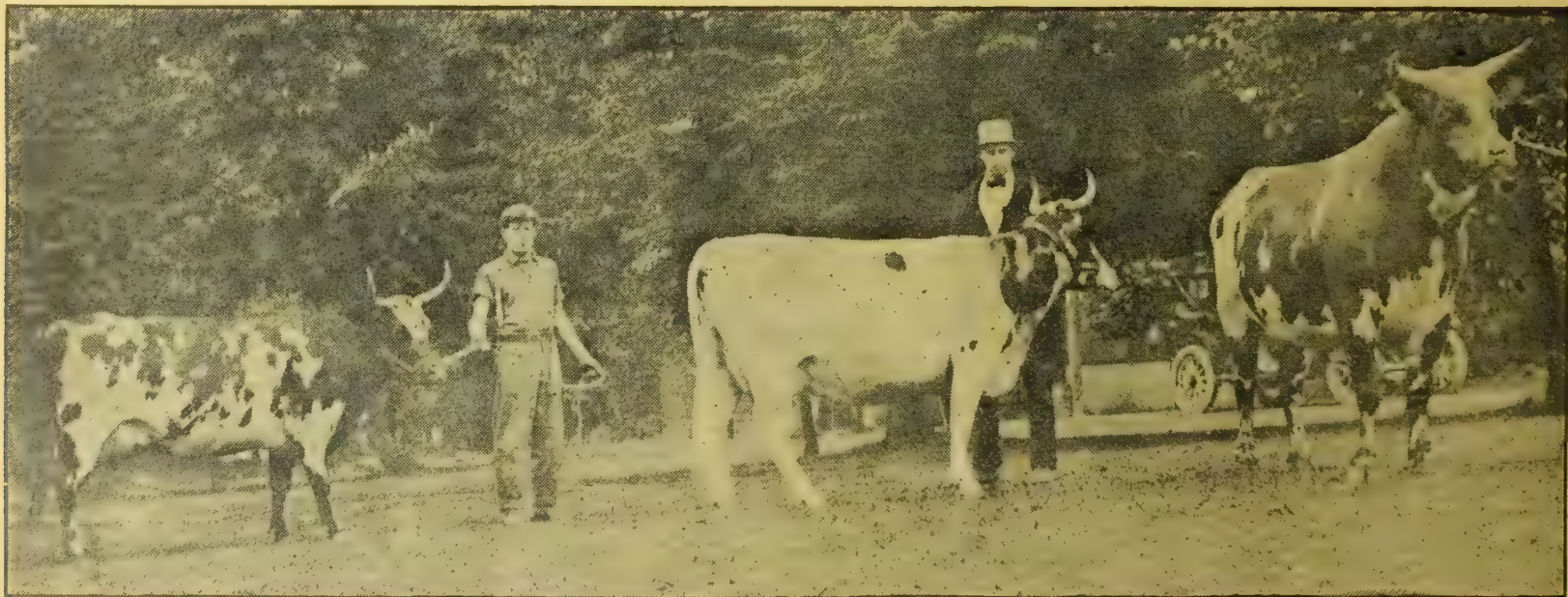
## HAMPSHIRE SWINE

"THE HOG WITHOUT A HOLLOW"

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

**W. P. TYLER,**

Route 1, Granger, Wash.



#### WILLOWMOOR AYRSHIRES FOR HAWAIIANS.

A shipment of Ayrshires from the Willowmoor Farms, at Redmond, Washington, was recently made to Mr. George Cooke, of Kaunakakai,

Hawaii Islands, as appears in this illustration.

The bull, Peter Pan 8th, is a son of their herd bull, Beuchan Peter Pan, Grand Champion of Great Britain and the National Dairy Show.

The white cow, Willowmoor Buntie B, was champion two year old at the Pacific International at Portland last year, and with her first calf, was milking at the rate of over ten thousand pounds per annum.

Willowmoor Nina, the dark heifer, is out of Drummondine, the sire of Lily of Willowmoor, the 1912 world's record Ayrshire cow, and which is now the long distance Ayrshire record cow.



Club and says his love of and interest in the Jersey increases with his years. He uses soiling crops and will fill his silo with corn.

### BUTTER HANDLING METHODS IN NEW ZEALAND.

The butter produced in New Zealand is mostly from cows on grass pasture as there is luxuriant grass the year round. Inspection of butter is very thorough, according to W. D. Hornday, writing in Hoard's Dairyman, an example for emulation for the butter producers of the Northwest.

Prior to the product leaving the creamery, each package must be marked on both ends with the churning date and the number of the vat of cream from which it was made. Then, when it reaches the grading store, one box of each Fahrenheit below zero. At this temperature no noticeable deterioration takes place.

The price of New Zealand butter is practically fixed in London. Even the domestic consumer must pay the London price, with three or four cents added thereto, although he may have a creamery at his very door. There has been a large increase in the price during the last few years. The consumer in New Zealand is naturally making complaint of the changed conditions, not only as applied to butter, but to meats. Formerly the best grade of butter could be bought in the local markets for 12 to 15 cents per pound, whereas the price is now above that which is paid by the export buyers.

### SECOND HOLSTEIN CONSIGNMENT SALE.

#### Great Corn Crops in Yakima Valley.

N. W. Horticulturist and Dairyman:

The Yakima Valley Breeders' second consignment sale of registered Holstein cattle will be held at North Yakima State Fair Grounds on November 19th.

At that time E. B. Marks, Wm. Todd and Sons will sell 90 head of as good a lot as to be had anywhere.

The consignment of Todd & Sons will consist of some of the good ones out of their herd, and I wish to assure readers of the Northwest Hor-

ticulturist and Dairyman that there are none better and few as good.

The Marks consignment will be of a very high order, for Mr. Marks now has a large herd of choice animals. Then too the females of breeding age will be bred to the best bulls to be found in the Northwest.

The consignment from my own herd will consist of yearling and two-year-old heifers that are as good as money and judgment could get together. They will be bred mostly to Annie DeKol Lakeside Model, whose dam at two years made over 31½ pounds butter in seven days, and near 130 pounds for 30 days. His full sister has for the second time made nearly 31 pounds. His own daughters, the poorest of which made at 3 years and 1 month of age 17½ pounds. Others at same age made from 21 to 25 pounds, with yearlings making from 14½ to 16 pounds.

He is a show bull and a producer of show animals which has been proven on more than one occasion. Eleven of his daughters in the last November sale averaged \$672 each, and none can be bought for that today.

He is now 5 years old, and while used only in a small herd, he has sired 75 per cent. or more of heifer calves.

I have only tested one of his daughters this year, and that was a two-year-old during the second week of July, with the thermometer around 100, and she made nearly 17 pounds. There will be some more to test as well as a few of his granddaughters this fall, the results of which I will be glad to report.

We have in this valley the best crops of all kinds I have seen in thirteen seasons. Hay is very heavy and of the best quality I ever saw; corn is as good as anywhere in the United States and I think better, but some one would say there is some more of those Yakima fellows bragging.

A man from near Tacoma, and he was raised in the corn belt of the Middle West, told me he saw the best corn here he had ever seen anywhere, and not only one field of it, but many all alike.

H. C. DAVIS.

Granger, Wash.

### DAIRY CATTLE AWARDS.

At Southwest Washington Fair.  
Cattle.

Class I.—Holsteins—Bull 3 years old and over, Phillips & Mrachek, Chehalis, 1st; W. A. Hamilton & Son, R. F. D. 3, Chehalis, 2nd.

Bull 2 years old and under 3—W. A. Hamilton, 1st; A. Hylak, Forest, 2nd.

Bull 1 year and under 2—H. W. A. Tramm, Adna, 1st; W. A. Hamilton, 2nd.

Bull under 1 year—W. A. Hamilton, 1st and 2nd.

Cow 3 years and over—W. A. Hamilton, 1st and 2nd.

Cow or heifer 2 years and under 3—J. C. Bush, Chehalis, 1st; F. M. Svinth, Chehalis, 2nd.

Cow or heifer 1 year and under 2

—J. C. Bush, 1st; W. A. Hamilton, 2nd.

Heifer under 1 year—H. W. A. Tramm, 1st; J. C. Bush, 2nd.

Breeder's young herd, to consist of 1 bull under 2 years, 2 heifers 1 year and under 2, 2 heifer calves under 1 year—W. A. Hamilton.

Calf herd to consist of 1 bull and 2 heifers under 1 year—W. A. Hamilton.

Pacific Coast Condensed Milk Company's special—E. L. Brewer, Satsop, 2nd.

Class II.—Jerseys—Bull 3 years and over—E. L. Brewer, Satsop, 1st; Coffman & Scherer, Chehalis, 2nd.

Bull 2 years and under 3—W. H. Cleveland, Ore., 1st; J. H. Taylor, Montesano, 2nd.

Bull 1 year and under 2—E. L. Brewer, 1st.

# Public Sale of Registered Holsteins

by the  
Holstein Friesian Association  
of Canada

at Steveston, B. C.

October 29 Beginning  
10 a. m.

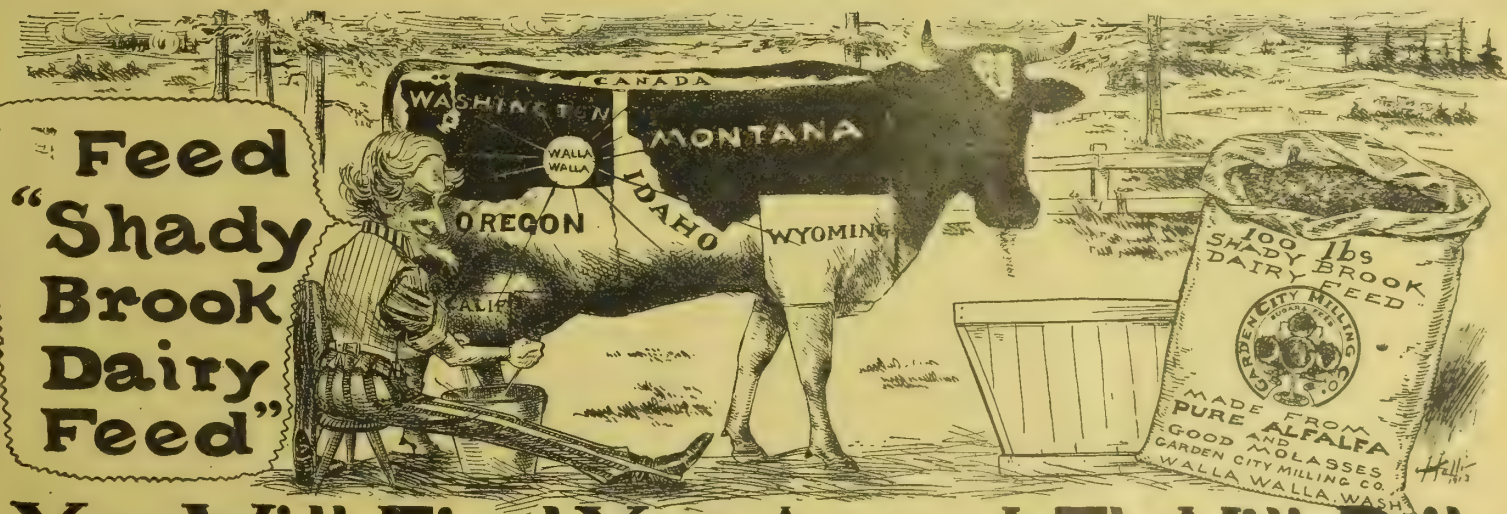
A total of 56 head will be sold, of which 40 are consigned by leading breeders of Ontario and 16 head are from the celebrated herd of J. M. Steves. The cows are all officially tested as to production, and the heifers and other youngsters are from officially tested dams. Good condition and health guaranteed. The catalog is now in press and all who are interested will please send their name and address for a copy. Further particulars cheerfully given on application.

WM. ATKINSON, Auctioneer  
Vancouver, B. C.

THOMAS LAING, Secretary  
Eburne, B. C.

Improves Quality Increases Quantity

Produces More Milk Less Cost



## You Will Find Your Answer In The Milk Pail

Leading dairymen all over the Northwest are using large quantities of it. They begin with about one quart of Shady Brook Dairy Feed per head twice daily—mixing with bran, shorts or other ground feed, for three or four days; then gradually increase the Shady Brook and decrease other feed until from four to seven quarts are used at each feeding.

If your dealer does not handle it, write us.

GARDEN CITY MILLING CO., Seattle, Wash.

WALTER SCOTT, MGR.

317 Board of Trade Bldg., Portland, Ore.

Seattle Dealers include—Chas. H. Lilly, J. L. Court, Galbraith, Bacon Co., Lehman Bros.

H. P. PRESTON, MGR.  
Seattle, Wash.

Tacoma Dealers include—Kenworthy & Son, South Tacoma; J. B. Stevens, Coast Trading Co., Hill Cereal Co.



Bull under 1 year—Coffman & Scherer, 1st; J. H. Taylor, 2nd.

Cow 3 years and over—E. L. Brewer, 1st and 2nd.

Cow or heifer 2 years and under 3—J. H. Taylor, 1st; E. L. Brewer, 2nd.

Cow or heifer 1 year and under 2—E. L. Brewer, 1st; J. H. Taylor, 2nd.

Heifer under 1 year—W. H. Cleveland, 1st; E. L. Brewer, 2nd.

Exhibitor's Herd, to consist of 1 bull 3 years and over, 1 cow 3 years and over, 1 cow 2 years and under 3, 1 heifer 1 year and under 2, and 1 either sex under 1 year—E. L. Brewer.

Breeder's Young Herd, to consist of 1 bull under 2 years, 2 heifers 1 year and under 2, and 2 heifer calves under 1 year—E. L. Brewer, 1st; W. H. Cleveland, 2nd.

Calf Herd, to consist of 1 bull and 2 heifers under 1 year—E. L. Brewer, 1st; W. H. Cleveland, 2nd.

Calf Herd, to consist of 1 bull and 2 heifers under 1 year—E. L. Brewer, 1st; W. H. Cleveland, 2nd.

Class III.—Guernseys—Bull 3 years and over—E. R. Brady, Satsop, 1st.

Bull 2 years and under 3—E. R. Brady, 1st.

Bull under 1 year—E. R. Brady, 1st.

Cow 3 years and over—E. R. Brady, 1st and 2nd.

Cow or heifer 2 years and under 3—E. R. Brady, 1st and 2nd.

Cow or heifer, 1 year and under 2—E. R. Brady, 1st and 2nd.

Heifer under 1 year—E. R. Brady, 1st and 2nd.

Exhibitor's Herd—E. R. Brady.

Breeder's Young Herd—E. R. Brady.

Calf Herd—E. R. Brady.

Class IV.—Ayrshires—Bull 3 years and over—John O'Connor, Centralia, 1st and 2nd.

Cow 3 years and over—John O'Connor, 1st and 2nd.

Cow or heifer 1 year and under 2—John O'Connor, 1st and 2nd.

Heifer under 1 year—John O'Connor, 1st and 2nd.

#### A UNIQUE CREAMERY

In Poughkeepsie, New York, overlooking the historic Hudson River, there is located a unique creamery.

Its walls are of concrete and its interior is clean, bright and cheerful, and flooded with sunshine. It is equipped with the most modern machinery, and in addition to cooling

States where practically all the milk is separated by hand separators.

This creamery is located in one of the buildings of the big Poughkeepsie, N. Y. Works of the De Laval Separator Co., which has for years maintained a most complete and thoroughly equipped Experimental Department, of which this creamery forms a part.

In the effort of the De Laval Company to maintain the standard of its machines, nothing is taken for granted and all improvements or changes in any of the De Laval machines are tested under actual use conditions in the De Laval creamery. There are also a number of machines taken out of the finished stock of each day's production and tested in this creamery, thus serving as an additional check on the already very severe mechanical inspection which every machine undergoes before it is shipped from the factory.

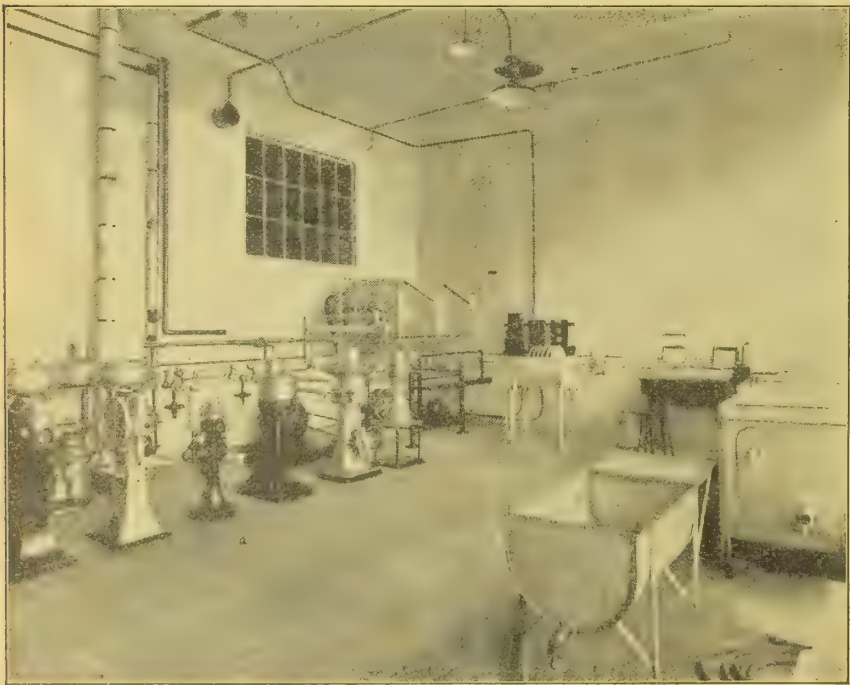
Most of the product of this unique creamery is disposed of in the form of cream to various New York hotels, and the skim-milk is utilized in the manufacture of cottage cheese, for which a ready market is found.

#### IMPROVING AVERAGE DAIRY HERDS

Besides good common sense, care in sheltering and feeding, all leading dairymen know the value and the necessity of the purebred sire backed with satisfactory records, to improve their herds.

It is the average owner of dairy cows who too often stands in his own light which prevents him from seeing possible profits within his power to grasp.

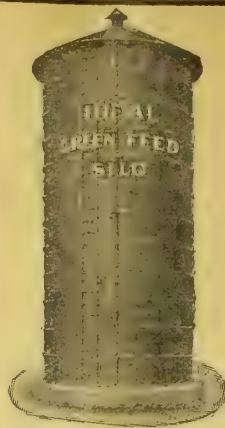
It is the indifference to the importance of selecting good sires from which the average dairyman need to be aroused. D. Brooks Hogan shows the need of good sires in a recent issue of the Pacific Homestead using figures for comparison. If a



vats, pasteurizers, Babcock Testers, etc., it also includes the necessary apparatus for making chemical analysis, acid determination, bacteriological investigation, and is equipped with special apparatus designed particularly for making delicate tests.

Although the amount of milk received each day is greater than that taken in by many creameries throughout the country, it is unique by reason of the fact that it is probably the only creamery in the United

States where practically all the milk is separated by hand separators. This creamery is located in one of the buildings of the big Poughkeepsie, N. Y. Works of the De Laval Separator Co., which has for years maintained a most complete and thoroughly equipped Experimental Department, of which this creamery forms a part. In the effort of the De Laval Company to maintain the standard of its machines, nothing is taken for granted and all improvements or changes in any of the De Laval machines are tested under actual use conditions in the De Laval creamery. There are also a number of machines taken out of the finished stock of each day's production and tested in this creamery, thus serving as an additional check on the already very severe mechanical inspection which every machine undergoes before it is shipped from the factory. Most of the product of this unique creamery is disposed of in the form of cream to various New York hotels, and the skim-milk is utilized in the manufacture of cottage cheese, for which a ready market is found.



## IDEAL GREEN FEED SILOS

If you want to know why our silo is the best on the market and why it is worth more money kindly write to any one of the following list:

U. S. Dept. of Agr., Glenwood, Hawaii.

University of California, Davis, Cal.

J. A. Faulk, Harrisburg, Ore.

A. S. Wooley, Harrisburg, Ore.

Oliver Morrison, Harrisburg, Ore.

Fred A. Grow, Winslow, Wash.

Peter A. Lindgren, Silverdale, Wn.

Thomas A. Hagener, Silverdale, Wash.

C. E. Greaves, Silverdale, Wash.

Edward Anderson, Silverdale, Wn.

Christ Anderson, Silverdale, Wn.

D. J. Davis, Port Orchard, Wash.

S. B. Hill, Salem, Ore.

L. H. Lickel, Salem, Ore.

Mrs. S. Bahnsen, Salem, Ore.

F. E. Langbien, Napavine, Wash.

J. Schuler, Puyallup, Wash.

J. T. Ray, Auburn, Wash.

Emma W. Trullinger, Eagle Creek, Ore.

J. F. Isom, Halsey, Ore.

I. A. Falks, Junction City, Ore.

C. R. Evans, Halsey, Ore.

Columbia Sinclair, Silverdale, Wash.

Wm. Schold, Silverdale, Wash.

A. J. Schold, Silverdale, Wash.

Have a Green Feed Silo ready to fill in October, insuring yourself against the high price of feed this winter.

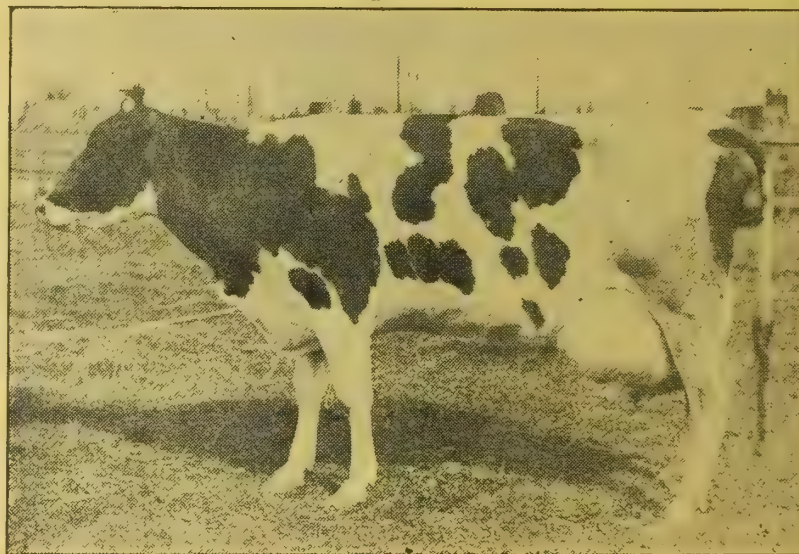
Write for Silo Folder C for full information.

## DE LAVAL DAIRY SUPPLY COMPANY

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

Ensilage Cutters and Alpha Gasoline Engines



The illustration represents one of the high grade Holstein cows which the owner bought from us while a calf. He has selected one of our pure bred sires to grade up his entire herd. This is the method many of our patrons have adopted and they are getting excellent results in milk and butter production.

## In Registered Stock

we offer 10 pure bred cows and heifers of Hangerveld De Kol breeding, with excellent records back on both sides. Also 5 pure bred bulls; among them Maple Lodge, 2 years old; Sir Hartog Korndyke and Sir Rag Apple Soldine; sires and dams on both sides all A. R. O., with records above 600 lbs. butter. We also offer a fine bunch of high grade young cows.

## FRYAR & COMPANY

Please Mention  
This Paper.

SUMNER, WASH.

### HOLSTEIN BULL FOR SALE

Chimacum Aaggie Cornucopia No. 64100, H. F. H. B., bred by M. S. Nye, Preble, New York. Calved August 15th, 1909. His grandam Aaggie Cornucopia Pauline is a 34-lb. cow. Sired by Aaggie Cornucopia Johanna Lad Junior No. 36, 974 H. F. H. B. Dam Onda Dorothy Concordia Paul No. 67853 H. F. H. B. A splendid animal, his youngsters are making excellent records.

A few choice cows for sale. Write for prices or call.

F. I. MEAD

524 California Bldg.

Tacoma

Please mention this paper

### PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hangerveld," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.



pound, or \$18.28 and enough extra skim milk for your boy to raise that runt pig on that you allowed him out of the generosity of your heart to claim until time to make pork of it for family use. Suppose the sire increases the test 5 per cent. With a cow giving 7500 pounds of milk in a year, that would mean 37.5 pounds more of fat. But ignoring this latter figure, take the average producing years of a cow as 8 years; eight times \$51.20 and \$18.28 would give an increased return from the daughters of the dams during their life periods of \$409.60 in the first case and \$146.24 in the latter.

Take an average herd of 20 cows in milk. Suppose we get an average of 10 heifers each year. The bull is kept in service three years. That would mean 30 heifers. Ten times our above figures for a year would be \$512 in the case of sale of whole milk and \$182.80 in the case of selling sour cream as value of the sire's improvement on the herd first year after his first daughters have developed to milking age; \$1024 and \$365.60 respectively the second year; \$1536 and \$548.40 the third year. Or, giving the 30 daughters their eight years production each, the value of the sire on the first generation without making any calculation of the value of his blood in second and later generations, would attain the astonishing figure of \$12,288 in the whole milk proposition and \$4,587.20 where cream is sold.

Do you not think paying \$250 for a sire from a Register of Merit dam is surely a more profitable investment than a pure-bred scrub at \$50? It doesn't take a man with a peck of brains to realize some of these things.

A dairyman might have a reason for not desiring to pay a high price for a good cow but who would wish to apply the same reasons when purchasing a bull? The sire's influence goes so much farther and spreads so much faster than the cow's.

The man who keeps the scrub bull has very poor business ability and would be a poor provider in any other business as well, besides dairying.

A poor bull, in good sized herd loses the price of several good bulls every year. An estimate of the value of an entire milk herd of cows should serve to determine the limit which the owner could afford to pay, for a good bull, but fortunately many good bulls can be bought below their actual value.

The man who always looks for something cheap usually gets it too often fooling himself when thinking he has struck a bargain.

### SUCCULENCE IN BEET PULP

Pacific Coast dairymen are welcoming the introduction of dried beet pulp as a solution of the problem of providing an all-the-year succulent feed for their cows.

As compared with silage it has been estimated by careful tests that one ton of dried beet pulp contains as much or more nutriment than five tons of good corn silage, with equal or greater succulence.

H. W. L. Gardiner, writing in Western Empire, states that ever since the best beet sugar industry was first established, dairymen living near the factories have been feeding wet pulp to cows with great profit. They realized its value as a

milk producer and the cows themselves were ravenous for it. But the advent of the drying process has produced great changes. Instead of having a large herd of cattle gathered near the factory to eat what they could of pulp which fermented a few hours after it left the factory, and running the rest through sewers to get rid of it, the sugar manufacturers are now furnishing the dried pulp to dairymen wherever they may happen to be located, by the ton or the carload in sacks about like bran, one ton of the dried pulp representing twenty tons of the fresh pulp. As the pulp is sacked and ready for shipment within one hour from the time the beets come into the factory from the fields, there is, of course, no time for fermentation, and if stored in a dry place it will keep almost any length of time.

In Germany, where beet sugar production has reached its highest development and both the government and the individual endeavor to discover the most valuable use to which any natural product may be put, it was first seen that beet pulp ought to be dried to be of full value, and the government offered a large reward for the best method of handling it. A satisfactory process was worked out, which has since been used in Germany. Two or three years ago it was adopted by several of the California sugar factories, and soon beet pulp will be fed everywhere on the coast, as it already is in the Eastern states, where an output of between ninety and a hundred thousand tons last season failed to meet the demand, and pulp had to be imported from Europe to supply the shortage. It will be fed wherever any concentrates are fed, and it will also be the dairymen's principal succulent feed, for when the dried pulp is soaked for a short time it will take up from six to eight times its weight in moisture, becoming about like the fresh beets when sliced.

#### Succulence Absolutely Necessary.

No dairyman nowadays needs to be told that his cows must have succulence if they are to do their best in milk production. If fresh pasture is the ideal food for dairy cattle and they give more milk and better milk during that part of the year when they are getting their fill of green pasture, then a winter or dry-season feed that comes as near as possible to giving the same returns is certainly necessary.

Dried beet pulp is particularly appreciated by farmers and owners of small herds. It also has a special and unique value in sections where alfalfa is plentiful and cheap, because it is just what is needed with alfalfa to make a good ration, and it has been very badly needed. In proper proportions these two feeds provide all the nutritive elements required for a balanced ration, and the beet pulp supplies the succulence in addition.

Dried beet pulp is pre-eminently a food for dairy cattle, although scarcely less useful for other farm livestock.

#### HOLSTEIN SALES BY

JOHN F. JANSSEN.

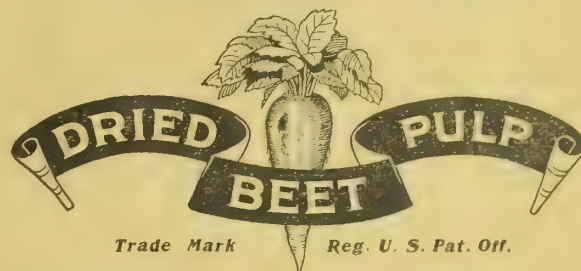
Among numerous sales by John F. Janssen, Seattle, during the past few weeks, 20 choice high grade cows were bought by the Lake Chelan Land Company, Chelan, Wash. Another lot of 20 high grade Holstein cows were sold to W. G. Swallow, Falls City. Mrs. J. R. Rowley, Westfall, Oregon,



Save  
the  
Cost  
of  
a  
Silo

and increase  
your milk  
production.

LARROWE'S



Trade Mark

Reg. U. S. Pat. Off.

—provides an all-the-year succulent feed, containing more than five times as much nutriment as silage, greater digestibility, and in addition it is clean, bulky and palatable.

### GET MORE MILK—INSTANTLY

When you start feeding Larrowe's Dried Beet Pulp you don't have to wait a week or a month to see results. You get an instant increase—from 1 to 5 lbs. more milk per cow a day. Larrowe's Dried Beet Pulp is not a secret formula or expensive combination feed, but simply the pure

shredded root of the sugar beet, with only the sugar and water extracted. It swells to six times its original bulk when moistened. Balances perfectly with alfalfa. Keeps indefinitely.

Thousands of dairymen are "cashing in" on this wonderful feed. How about you?

### PROVE ITS VALUE WITH ONE SACK

#### LARROWE'S MOLASSES-DRIED BEET PULP

— is preferred by some feeders on account of its sweetness. Just the plain Beet Pulp with beet molasses dried. Fine for fattening, also for horses. Try one sack.

Go to your feed dealer today and get one 100-lb. sack and test it on one cow whose milk record you know. Be sure you get "Larrowe" Dried Beet Pulp—the kind that is light in color, never blackened or burned.

"Profitable Feeding" our booklet giving instructions and other information will be sent free on request. Write for it.

THE LARROWE MILLING CO.  
Sixth Floor—Central Bldg. Los Angeles, Cal.

## The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm.  
Write for prices on trial-lot shipments.

### THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.

## Albers' Molasses Feed

Is Ground Barley a good feed for milk cows?  
Is Oil Meal a good feed for milk cows?  
Is Oat Middlings a good feed for milk cows?  
Is Cane Molasses a good feed for milk cows?  
YES is the answer.

Mix these feeds together and you have a combination that is hard to beat. ALBERS MOLASSES FEED is composed of good quality Ground Barley, Linseed Oil Meal, Oat Middlings and Pure Cane Molasses. The price is so low when the feeding value is considered, that you cannot afford to feed without it, and when fed in conjunction with Alfalfa Hay makes a complete ration for a milk cow. Ask your Dealers.

## Albers Bros. Milling Co.

Largest Cereal Millers in the West  
TACOMA SEATTLE



selected two registered heifers, besides some youngsters went to other buyers. Mr. Janssen maintains the reputation of high quality for every animal offered and sold.

#### SOME HOLSTEIN SALES

BY MR. ROYCE.

During the past month, Mr. E. B. Marks, of North Yakima, bought a registered heifer from H. S. Royce, Tacoma, which is sired by Mutual

Piebe DeKol and in calf to a young bull whose dam is Queen Julie Anne Derkje, whose butter record is 3,000 pounds for 3 years, the only record of the kind in the world.

Calvin Philips bought 2 young cows from Mr. Royce—one a daughter of Lady Reka Mooie. Dr. R. D. Wilson, of South Tacoma, bought several registered cows with excellent records. Mr. Royce is preparing to exhibit 10 head of choice Holsteins at the Roy fair.

## STOCK

#### RAISING AND FITTING HOGS.

Farmers Bulletin 599 U. S. Dept. of Agriculture, by Byron Hunter, state leader of Farm Management, gives some valuable hints on raising and preparing hogs for the market profitably for the farmer. He is convinced that in many cases much labor can be eliminated by making preparations to have hogs harvest a crop of wheat, barley, peas or corn.

##### Advantages in Hogging off Crops.

Some of the advantages in hogging off crops are (1) the cost of harvesting and marketing the crop is saved, (2) the labor of caring for hogs is greatly reduced, (3) the vegetable matter in the soil is increased, (4) the droppings of the animals are distributed quite evenly, and (5) the hogs are given exercise. It costs from 15 to 25 cents per bushel to harvest and market wheat in the greater part of the wheat belt of the Pacific Northwest, the cost varying with the yield, the method of harvesting and thrashing, and the distance the wheat is hauled to market. In some of the more arid wheat-growing districts of both Oregon and Washington the yield of wheat is frequently as low as 6 to 8 bushels per acre. The cost of harvesting and marketing such crops runs from 35 to 40 cents per bushel. The cost of harvesting and marketing barley is approximately the same as that of wheat. When the hogs are so managed that the crop is thoroughly cleaned up, hogging off the crop practically saves the cost of harvesting and marketing. In the case of light-yielding crops this saving is considerable.

Most of the crops that are suitable for hogging off are utilized during the busiest season of the year, i. e., at a time when it is very desirable that the hogs require as little attention as possible. If turned into mature field of wheat, peas, or corn and provided with water, shade, and salt, the hogs require very little other attention.

##### Hogging Crops in Coast Section.

Wheat—Hogs make rapid and economical gains on wheat until the chaff becomes thoroughly dry. If they are then supplied with green feed, they will do much better. If peas are not available for hogging off during August and September, wheat may be used until the autumn rains begin. Spring wheat may also be grown to take the place of the peas.

Beardless barley. — If no winter wheat is available to hog off, its place may be filled with beardless barley. In fact this crop may take the place of corn and peas as well, being used from the time it is in the stiff-dough stage, about July 10, until winter rains come. Hogs do exceptionally well on it after the rains have soft-

ened the kernels.

Peas.—To furnish autumn pasture, one-half peck of wheat or a peck of oats is frequently sown with peas that are to be hogged off. In working upon the mature crop the hogs cause considerable of the oats or wheat to shatter out. Much of this is covered by the tramping of the hogs. When the first fall rains come it germinates and furnishes good pasture.

Corn.—Corn is hogged down to good advantage in much of the territory west of the Cascade Mountains for about six weeks—that is, from the time the kernels are pretty well glazed and dented until late in the fall. After the rainy season is well begun, the hogs get many of the ears down on the wet ground. This causes the corn to mold and spoil. For this reason it is not best to undertake to hog off too late in the season.

Artichokes is another good crop for this purpose, planted and grown in the same manner as potatoes, but in rounding off for the market in the fall some grain should be fed in connection.

##### Alfalfa and Corn.

In the irrigated districts where both alfalfa and corn is grown, no superior nor cheaper feed could be produced. Alfalfa may be grown in the orchard and on an adjoining plot some corn so timed that when rounding off, the partition fence opened will permit the hog to feed on both the corn and the alfalfa. Towards the last of a feeding period the grain should predominate in the feed ration whether or not there is free access to one or both.

#### LIVE STOCK SHOW

##### Pacific International Live Stock Exposition, Portland, Ore.

The next great live stock show in the Northwest is to be held at Portland, Oregon, December 7-12.

The preliminary classification and catalog is ready for distribution. Apply for copy to N. C. Maris, Sec., or to O. M. Plummer, North Portland, Oregon.

##### HORSES AND CATTLE AT SOUTHWEST FAIR

Some attractive French Percheron and Belgian horses were shown at the Southwest Washington Fair on which awards were:

Class 1, Percherons—Stallions, 4 years old and over, L. P. Schumacher, Curtis, first, A. Hylak, Forest, second. Mares, 4 years and over, L. P. Schumacher, Curtis, 1st; E. W. Mills, Seattle, 2nd.

Mares, 2 years and over, E. W. Mills, Seattle, 1st and 2nd.

Mare or gelding, 3 years and under,

# Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

#### SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,  
WIND PUFFS,  
THRUSH,  
DIPHTHERIA,  
SKIN DISEASES,  
RINGBONE,  
PINK EYE,  
SWEENEY,  
BONY TUMORS,  
LAMENESS FROM  
SPAVIN,  
QUARTER CRACKS,  
SCRATCHES,  
POLL EVIL,  
PARASITES.

#### REMOVES

BUNCHES or  
BLEMISHES,  
SPLINTS,  
CAPPED HOCK,  
STRAINED TENDONS.

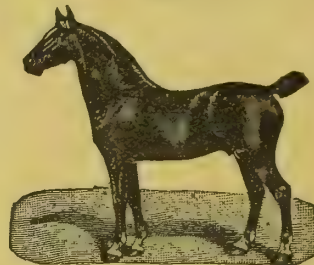
SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard  
VETERINARY REMEDY

Always Reliable.

Sure in Results.



None genuine without the signature of  
The Lawrence-Williams Co.  
Sole Proprietors & Distributors for the  
U. S. & CANADA. CLEVELAND, O.

#### NOTHING BUT GOOD RESULTS.

Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often.—W. H. RAYMOND, Prop. Belmont Park Stock Farm, Belmont Park, Mont.

#### USED 10 YEARS SUCCESSFULLY.

I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CRAMER, Training Stables, 990 Jennings Street, New York City.

Sole Agents for the United States and Canada.  
**The Lawrence-Williams Co.**  
TORONTO, ONT. CLEVELAND, OHIO.



## Holsteins Pure Bred and High Grade

Over 100 from which to select

Among very choice registered stock we are offering such cows as Helena Pontiac, sired by Pontiac Hercules, producing 70 lbs. milk per day, good for 25 lbs. butter per week. Clothilde Riganeta De Kol Lady, a young cow sired by Madrigal Friend. Her dam Riganeta De Kol 2nd has a record of 76 lbs. milk per day, with 4.01 test. Jessie Cornucopia Pietje No. 201560, 2 years 3 months old, is out of a dam with a record of 18,000 lbs. milk a year, and 21 lbs. butter record per week. Pietje Beauty, 3 years old, has a 14½-lb. butter record at 2 years. These are bred to a 30-lb. record son out of King Segis, and others to a son of King of Pontiacs.

We have some very choice young sires of Homestead De Kol breeding, and high record dams.

OUR HIGH GRADES show excellent breeding, good type, great capacity and are in fine condition.

Numerous selections are being made. Write or make appointment for further particulars.

## VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

## HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. DE KALB  
De Kalb, Ills.



A. Hylak, Forest, 1st and 2nd.  
Mare or gelding, 1 year and under,  
W. A. Hamilton, Chehalis, 1st.  
Colt, under 1 year, A. Hylak, 1st;  
Chas. McNess, Dryad, 2nd.  
Five colts, get of registered sire,  
any age or sex, A. Hylak, 1st.  
Class 2—French Draft horses—  
Mares, 4 years and over, L. P. Schu-  
macher, 1st and 2nd.  
Mares, 2 years and under, L. P.  
Schumacher, 1st.  
Class 5—Belgians—Stallions, 4  
years and over, M. H. Gibson, Che-  
halis, 1st.  
Mare or gelding, 2 years and under,  
M. H. Gibson, 1st and 2nd.  
Mare or gelding, 1 year and under,  
M. H. Gibson, 1st.  
Colt under 1 year, M. H. Gibson,  
1st.  
Class 8—German Coach, stallions,  
4 years and over, W. J. Vaughn, Che-  
halis, 1st.  
Class 12, Welsh and Shetland  
ponies—Mares, 3 years and under 4,

N. C. Sorenson, Alpha, 1st and 2nd.

#### Beef Cattle.

A choice exhibit of short horns  
was made by A. Chalmers, Forest  
Grove, Oregon, Red Polls by F. H.  
Porter, Halsey, Ore., both breeds  
winning deserved prizes.

#### SHEEP AT SOUTHWEST WASH- TON FAIR

Among exhibitors and prize win-  
ners of sheep are: on Shropshires, W.  
H. Cleveland, Gresham, Ore., all  
prizes. On Southdowns, A. Hylak and  
J. G. Hubbard. The Oregon Agri-  
cultural College, Corvallis, Ore., had  
a good exhibit of Cotswolds—all  
prizes. The Oregon Live Stock Co.  
Corrallis, Ore., took all prizes on Lin-  
colns and their showing was excel-  
lent. On Dorsets, W. H. Cleveland,  
Gresham, Ore., had all awards. The  
Willamette Valley Stock and Land  
Co. made a good showing of Hamp-  
shires and took all prizes.

The general exhibit and fine quality

## Puget Sound Herd Holsteins



Chimacum, Wash., Aug. 31, 1914.

Official seven-day records made by cows and heifers from the Puget Sound  
herd during the last ten months are as follows:

| Name—                             | Age.    | Milk.      | Butter.    |
|-----------------------------------|---------|------------|------------|
| Sena J2d Paul De Kol .....        | 5 years | 545.9 lbs. | 23.97 lbs. |
| Lady Aaggie De Kol Artis .....    | 4 years | 561.3 lbs. | 21.89 lbs. |
| Grace Oswald Cornucopia .....     | 4 years | 514.7 lbs. | 21.27 lbs. |
| Aaggie of Lulu .....              | 5 years | 400.8 lbs. | 20.48 lbs. |
| Manor Aaggie Grace Korndyke ..... | 6 years | 486.7 lbs. | 19.97 lbs. |
| Everett De Kol Plum .....         | 4 years | 512.6 lbs. | 19.7 lbs.  |
| Lakeside Soldene Pietertje .....  | 8 years | 427.4 lbs. | 19.06 lbs. |
| Bonnie Bess Nelson 3d .....       | 8 years | 443.4 lbs. | 19.1 lbs.  |
| Gettie De Kol 2d .....            | 3 years | 468. lbs.  | 19.08 lbs. |
| Chimacum Nettie Wayne .....       | 4 years | 393.9 lbs. | 18.89 lbs. |

The remainder of the lot are in the two-year-old class and have for a leader  
Chimacum Wayne Boon 2d, which at 2 years 4 months produced 22.56 lbs.  
butter and 519.4 lbs. milk in seven days, and 2,123.1 lbs. milk and 89.25 lbs.  
butter in 30 days. This record was made during the hot and dry month  
of August. This record, as far as we know, is the largest in the West in her  
class.

| Name—                                | Age.    | Milk.      | Butter.    |
|--------------------------------------|---------|------------|------------|
| Princess Pontiac Pauline Segis ..... | 2 years | 427.2 lbs. | 19.42 lbs. |
| Violet Veeman Pontiac .....          | 2 years | 378.5 lbs. | 15.91 lbs. |
| Ada Veeman Pontiac .....             | 2 years | 447.6 lbs. | 15.47 lbs. |
| S. V. H. Molly .....                 | 2 years | 304.6 lbs. | 13.43 lbs. |
| Colantha Sadie Vale .....            | 2 years | 286.7 lbs. | 13.28 lbs. |
| Cornucopia De Kol Beauty .....       | 2 years | 323.9 lbs. | 13.28 lbs. |
| Abberkerk Veeman .....               | 2 years | 299.6 lbs. | 13.69 lbs. |
| Ononis Lady May .....                | 2 years | 328.8 lbs. | 12.6 lbs.  |
| Ononis Snowball De Kol .....         | 2 years | 335.2 lbs. | 12.75 lbs. |
| Queen Gettie De Kol .....            | 2 years | 290.8 lbs. | 12.54 lbs. |
| Netherland Maggie Wayne Boon .....   | 2 years | 352.7 lbs. | 12.54 lbs. |
| Bell Fayne 2d .....                  | 2 years | 287.1 lbs. | 12.53 lbs. |
| May Hengervelt Burke De Kol .....    | 2 years | 284.6 lbs. | 12.25 lbs. |
| S. V. H. Clothilde .....             | 2 years | 304.6 lbs. | 11.56 lbs. |
| Sunny Croft De Kol 2d .....          | 2 years | 313.6 lbs. | 11.45 lbs. |
| Jefferson Lilly Aaggie .....         | 2 years | 241.2 lbs. | 10.74 lbs. |
| Lilly Johanna Beets 2d .....         | 2 years | 251.5 lbs. | 10.69 lbs. |

Many of these heifers and a few of the cows were tested in the winter  
time and 30 to 50 days after calving and were in every-day milking condition.

Grace Oswald has a 30-day record of 2,222.7 lbs. milk and 86.58 lbs. butter.  
Princess Pontiac 1,768.7 lbs. milk and 74.48 lbs. butter in 30 days.

**WM. BISHOP, Chimacum, Wash.**

When writing please mention this paper.



WE ARE IN THE MARKET FOR A FEW

## Mortgage Lifters

Have You a Mortgage on Your Farm?

IF SO OR NOT

BUY HIGH CLASS GRADE HOLSTEIN DAIRY COWS  
FROM THE

SPOKANE GRAIN CO.

THE COWS WILL DO THE REST.

IF YOU CANNOT BUY COWS, BUY HOLSTEIN  
CALVES. WE HAVE BOTH FOR SALE, AND GOOD  
ONES. COME AND SEE US. IF YOU CANNOT COME,  
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We have some Fresh Cows ready for immediate delivery

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SEATTLE, WASH.

JERSEY OR GUERNSEY FAMILY COWS

SECOND ANNUAL PACIFIC INTERNATIONAL

# HOLSTEIN

## SALE

**150** Registered Holstein Cattle **150**

At Union Stock Yards, North Portland, Oregon

Two days sale

**DECEMBER  
11-12, 1914**

The stock to be offered is some of the best  
selections, from some of the finest herds in the  
West, including both high-bred males and females.

Remember the dates and make your arrange-  
ments accordingly to attend the largest and best  
sale ever held west of Chicago.

**GEO. A. GUE, Manager**  
RIDGEFIELD, WASH.



of sheep at this fair was a surprise to most of the visitors.

#### PRIZE HOGS AT SOUTHWEST FAIR

The following awards were made on hogs at the Southwest Washington Fair.

##### Class I.—Bershires.

Boar 1 year old and over, J. A. Simonson, North Yakima, 1st and 2nd.

Boar 6 months and under 1 year, T. M. Meikle, Castle Rock, 1st; Branch Kemper & Miller, Lacy, Wash., 2nd.

Boar under six months, J. A. Simonson, 1st and 2nd.

Sow one year and older, J. A. Simonson, 1st and 2nd.

Sow 6 months and under one year, Branch, Kemper & Miller, 1st; J. A. Simonson, 2nd.

Sow under 6 months, J. A. Simonson 1st and 2nd.

Fat barrow over 6 months, Branch, Kemper & Miller, 1st.

##### Class II.—Poland China.

Boar 1 year and over, L. H. Linbarger, North Yakima, 1st and 2nd.

Boar 6 months and under 1 year, L. H. Linbarger, 1st.

Boar under six months, L. H. Linbarger, 1st; C. W. Sill, Napavine, 2nd.

Sow 1 year and older, L. H. Linbarger, 1st; C. W. Sill, 2nd.

Sow 6 months and under 1 year, L. H. Linbarger, 1st.

Sow under six months, L. H. Linbarger, 1st; C. W. Sill, 2nd.

Fat barrow over 6 months, L. H. Linbarger, 1st.

##### Class V.—Durock Jerseys.

Boar and Grand Champion to D. W. Bagley, Lacy, Wash.

##### Class VII.—Essex.

All prizes without competition went to W. H. Cleveland, Gresham Ore.

##### Champions.

Berkshire boar and sow to J. A. Simonson, North Yakima. Poland China boar and sow to L. H. Linbarger, North Yakima.

#### ANGORA GOAT RAISING

The raising of Angora goats in the United States is now a demonstrated success according to a report just published by the United States Department of Agriculture under the title, "The Angora Goat," Farmers Bulletin 573. The industry, says the bulletin, is indeed so well established here that growers need not be inconvenienced by the action of South Africa in prohibiting the exportation of Angoras, for the quantity of good blood in this country is already sufficient to meet all requirements. In the opinion of experts the best American fleeces now equal any grown in South Africa or Asia Minor, the original home of the Angora.

Although nearly every State in the Union now possesses its flocks, the Southwest and the Northwest are especially well adapted to the industry, in particular the large areas recently logged-off in the Northwest. There the Angora not only thrives himself but helps to clear away the brush which if allowed to grow unchecked, easily becomes a dangerous fire trap. Thus it is often said that the Angora works and pays for its board at the same time.

It is paying more and more, for the value of the fleece or mohair is increasing steadily. Formerly the use of mohair depended so largely upon

the prevailing fashion that its price varied widely from year to year. This condition, however, is rapidly changing as new uses for mohair are continually found, from automobile tops and table covers to dress goods and curled false hair, and today the grower is assured of a reasonably steady market. The price of course varies with the quality, the very best fleeces bringing on an average from 42 to 55 cents a pound. The weight of a fleece has a very wide range but in 1909 the average for Oregon was found to be 3.7 pounds and for Texas 1.85.

U. S. Information Bureau.

#### METHODS OF COMBATING ABORTION

The granular venereal disease of cattle is, so far as known, universally distributed. From clinical observation it has a vital relation to contagious abortion. It is incurable in the present state of our knowledge, but may be greatly decreased in virulence.

The ordinary if not sole avenue of the entrance of the infection of contagious abortions is the genital canal, and the invasion antedates the sealing of the uterus, which ordinarily occurs within 30 days after conception.

In the present state of our knowledge little or nothing can be done to prevent abortion once the pregnant uterus is sealed and the infection of contagious abortion exists within the hermetically sealed cavity.

By systematic disinfection of the genitalia immediately following abortion or premature birth, and also in retained afterbirth and kindred infections of the uterus, the affected animals may be largely guarded against future sterility and abortion. It is even more important that the vaginae of heifers, whether virgin or previously bred, and cows shall be systematically disinfected for a period before and after breeding, until conception is assured.

It is equally important that the genital organs of breeding bulls be kept clean by regular disinfection, including washing immediately prior to and after service.

#### SELECTING THE BREED OF SHEEP

Wide Variety for the Farmer to Choose From. Mutton and Wool Varieties.

Farmers who contemplate the raising of sheep on their farms are urged by the U. S. Department of Agriculture to give considerable thought to the selection of a breed. In all there are thirty breeds of improved sheep that have been brought to fixed types. Of these twelve are already well established in the United States and others are gaining in popularity. Each has its own points of superiority and the farmer must be guided in his choice by the individual conditions, bearing in mind, however, the fact that any breed is superior to no breed.

Although it is hardly to be expected that every farmer in a neighborhood will select the same breed of sheep, there are several advantages to be derived from a number doing so. For example new rams can be purchased for the common benefit when any individual owner might well hesitate at the expense; and if the lambs are ready in large num-

bers for market at the same time, they may be shipped cheaply by the carload or the buyers may find it worth their while to come after them.

In selecting a breed it should be remembered that no system of sheep farming is likely to be long successful which leaves out of account either wool or mutton. One or the other, however, may well be emphasized according to local conditions. Thus if pasturage is sparse, feed expensive and marketing arrangements poor, wool will naturally be the first consideration. On the other hand, where conditions are more favorable, a breed will be selected for its mutton qualities. Even then, however, there is a wide latitude of choice.

In order to assist the farmer in this choice, the U. S. Department of Agriculture has just published in Farmers' Bulletin 576, "Breeds of Sheep for the Farm" descriptions and photographs of the principal breeds, together with the addresses of the secretaries of various breeding associations, from whom additional information can be obtained. These breeds may be divided into three main groups, the Middle Wool, the Long Wool, and the Fine Wool. All the Middle Wool breeds have been developed primarily for mutton. The Long Wools also are bred chiefly for mutton. They are the largest of all sheep and thrive best where food can be obtained without much travel. They do well also in regions of excessive rainfall. The Fine Wools, including the American Merinos and the Ramboulett, have been bred almost entirely for their wool alone.

Some of these many breeds, says the bulletin, should be selected and maintained, for it is rarely good policy to cross sheep.

##### Hollywood A. R. O. Milk Herd.

The Hollywood Farm, Hollywood, Wash., has a milk herd of 90 Holstein cows, all in the A. R. O. class. Their young sires have a good foundation for valuable service.

##### Limberger's Poland Chinas.

L. H. Limbarger, of North Yakima, the Poland China specialist had his usual high class exhibit at the Southwest Washington Fair. He has sold out almost completely of last years breeding but a fine lot of youngsters to be ready and which he will advertise in this journal in January. Strictly prime quality is his reputation and he can best maintain this standard by his own raising. His herd is ideal both in appearance and in practice. Every hog must produce four good "hams" and finish a weight of 180 pounds in 180 days. It is done by careful selection proper breeding and judicious feeding. The first three months after weaning, the basis feed is alfalfa and corn, and during the next three months more corn with a little less alfalfa and enough other hog feed mixtures to prevent a monotony of the alfalfa and corn diet. To gain one pound a day at a minimum cost is the business of every Poland China hog in the Linbarger herd and the owner is careful to see that every hog is attending strictly to his business.

##### Simonson's Bershires.

J. A. Simonson, North Yakima, had a very pleasing exhibit of Bershires at the different fairs. Alfalfa and corn, then corn and alfalfa grows the perfect shaped Berkshire in Yakima County cheaply. Large sales of breeders were made the past year.

## Raise Wheat

Big money will be made raising wheat next few years. We have some fine, well improved wheat farms in the best wheat raising section of Eastern Oregon, \$22.50 to \$25 per acre. Easy terms. Write us and mention this paper.

ACME REALTY COMPANY  
401 Equitable Building, Tacoma.

## Poland China Boars

Have some good ones 4 months old, also boar pigs of good breeding. Gilts all sold.

F. C. BRUCE  
Grandview, Wash.

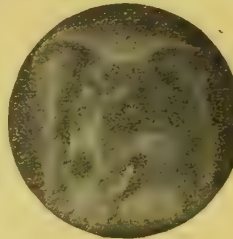
#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

FOR REGISTERED DUROC JERSEY  
bred sows and male pigs, write McK.  
Edwards, Valley, Wash.

#### Oregon Collie Kennels



Established 42 years.  
Choice Puppies (either sex)  
Breeding Pairs  
Bitches in whelp and stud dogs for sale.  
Send 2c stamp for illustrated catalog.  
C. D. NAIRN  
Shadeland Farms  
E. P. D. 2  
Amity, Oregon

#### DRIED BEET FOR HOGS.

Rasmussen & Plake, Long Beach, Washington, give their experience with feeding beet pulp to hogs, stating:

"We are feeding Larowe's molasses pulp to hogs of all ages, including those being fattened for the market. It is especially good for mother sows, as it increases the milk flow very much.

"About two months ago we put 40 six-weeks-old pigs on trial. The ration for each was 4 lbs. skim milk, ½ lb. molasses-dried beet pulp, ½ lb. wheat shorts. This naturally had to be increased in the same proportion. After two months feeding most of the 40 pigs now weigh from 80 to 90 lbs.

"The molasses has to be fed dry, as neither the young nor the older stock like it wet. Molasses-dried beet pulp is without doubt the cheapest and healthiest hog feed on the market today."

C. B. Cunningham, Mills, Calif., uses equal parts of ground grain and beet pulp, well mixed, salted and soaked, an extremely good feed for fattening hogs.

Equal parts of alfalfa, meal, ground grain and beet pulp make a well-balanced feed for all sizes and ages and the swine do well on it. For sows with suckling pigs, equal parts of wheat middlings, alfalfa meal, beet pulp and ground grain, made into thick slop, give the best of results, the sows keeping well up in flesh and giving an abundance of milk.

#### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

JEFFERY HILTON,  
Marysville, Wash.

#### Registered Jerseys

BERKSHIRE  
SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD  
Route 1, Box 12 Fairbanks, Wash.

## Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### BUTTER AND EGG MARKET PROSPECTS.

Miller Brothers, the leading cream, butter and egg firm, of Tacoma, state that the production of butter fat by the dairymen of Western Oregon is so much larger than during past years that its appearance here will prevent the Puget Sound butter market from going higher. While prices are not likely to drop much, the prospects are for a steady market during the next few months. The Jersey remains the prominent breed with Oregon dairymen, they have increased the average producing capacity of their herds and are raising a larger amount of vetch, clover, kale, corn ensilage, and other cheap feeds than formerly.

Dairymen in the coast section of Washington supply the city milk trade and condensers first, butter fat being as a rule, the second consideration. Producers have no complaint with present prices. Their average profit margin for the year will depend on cost of production which includes the question of capacity of each individual cow.

The egg market remains firm with upward tendency. Farmers are urged to condition their poultry for early laying, giving needed shelter, feed and to provide good sanitation. Fresh eggs are equivalent to good cash. The question with the producer is how many and how cheaply can he supply of them.

### EGGS BY PARCEL POST

Eggs are now shipped successfully by parcel post. Various styles of cartons being made for that purpose.

Our readers can ship in eggs daily or so often as their egg production is required to meet the wants of customers. Dealers in butter and eggs advertising in our columns, handle eggs on a close margin and are dependable for prompt remittance. They appreciate customers who send regularly eggs which are fresh and clean. The market will be excellent for the next four months at least.

### CANDLING EGGS

Colored Chart of U. S. Agricultural Department an Aid.

To enable farmers and housewives to test eggs before a candle and tell accurately their condition before they are opened, the Department of Agriculture has just published a colored egg-candling chart. To give a true picture of the eggs, twelve impressions were necessary to produce this lithographed chart.

This chart shows the eggs in their natural size as they appear before a candle, and also as they look when open in a glass saucer. The pictures include an absolutely fresh egg, slightly stale eggs, decidedly stale eggs, eggs with yolks sticking to the shell, eggs where the chicken has developed so far that blood has been formed, moldy eggs, addled eggs, and eggs with a green white.

Comparatively few housewives are aware that a green color in the white of eggs is due to the presence of billions and billions of a certain species of bacteria that make a green

coloring matter. Eggs with this greenish tint, even though the yolks seem to be perfect, are not fit for food.

As long as the Department's supply lasts, these charts will be furnished free upon application to the Editor and Chief, Division of Publications. Commercial shippers of eggs, however, should apply for Department Bulletin 51, technical paper on testing by scientific methods not available to the average farmer. This bulletin includes the colored illustrations. This chart alone will be found to be not merely of great service to the housewife wishing to test eggs she is to serve to her own family, but also of commercial value to farmers, country merchants, or egg shippers who wish to buy and handle eggs on an accurate quality basis.

### LAYING PULLETS.

Pullets should be well matured to size and with a good proportion of fat stored in their bodies, then with the usual mixed feed rich in protein, comfortably sheltered and correct sanitary surroundings, there will be no difficulty in keeping them in line for egg production. But all necessary details must be given careful and timely attention.

## Facts and Figures

### MINERAL IN PAINT.

Rich is the State of Washington in natural resources. It has products of the forest, soil and sea incomparable in extent and quality. But little prominence or development has been given to products of the mine excepting coal. In the eager search for precious metals the other mineral products have been overlooked and doubtless useful minerals such as Fullers earth, diatomaceous earth, silica and various metallic oxides have been given little attention. Among the products of this kind is mineral paint, and it is doubtless interesting to know that some attention and development has been given to this very useful product. The Mashell Paint Company of Tacoma for the past fifteen years has been developing a deposit of metallic paint found in Western Washington, and has erected a factory in Tacoma for the manufacture of a ready for use paint. The natural pigment has proven itself to have remarkable covering and protective qualities and is being used extensively in the manufacture of paint, kalsomines, etc. The ore in its natural state is peculiar by reason of containing native copper, found throughout the deposit in grains, shot, nuggets and leaves. By reason of this the paint company has adopted "Copper Ore" as a name for its paint product. The paint is being well received by large and small users for exterior use on wood and iron, on freight cars, warehouses, sheds, bridges, dwellings, roofs, etc. The industry promises to grow into a large and profitable business as the product becomes better known to the consuming trade.

Van Woerden & Fisher, of Thomas, Wash., have been supplying a considerable number of dairymen with fresh milk cows during the past two months. The demand is so persistent that an endeavor is being made to round up several carloads of choice cows in leading Holstein districts east to offer prospective buyers in a second public sale. Watch this paper for their further announcements.

## ALBERS' PROGRESSIVE MASH MIXTURE

Right now while your hens are moulting, they require a well-balanced, well-mixed mash that will furnish the proper ratio of protein carbohydrates and mineral substances necessary to make feathers and stimulate egg production.

ALBERS PROGRESSIVE MASH MIXTURE contains all the nutriment moulting and laying hen needs—it is composed of Kaffir Corn Meal, Soya Bean Meal, Oat Meal, Barley Meal, Corn Meal, Bone Meal, Wheat Meal, Rolled Oats, Rolled Wheat, Linseed Oil Meal, Charcoal, Salt and Blood Meal.

It is to your advantage to investigate. Ask your dealers. Accept no substitute.

## ALBERS BROS. MILLING CO.

Largest Cereal Millers in the West

TACOMA

SEATTLE

## EGGS AND CHEESE

We are handling quantities of these satisfactorily for producers. Write for particulars.

WASHINGTON CREAMERIES ASSOCIATION

E. Hazelton, President.

A. C. Van Houten, Secretary.

1114 Western Ave.,  
Seattle, Wash.

## PEDIGREED COCKERELS

From Trapnested

S. C. White Leghorns

and

Barred Rocks

Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

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HADLOCK, WASH.

## VETCH CLOVER and other GRASS SEEDS

GET your orders in early to make sure of minimum price. Remember ours won't stay in the ground. They grow. Catalog and price list on application.

J. J. BUTZER

188 Front St., Portland, Ore.

The O.-W. R. & N. Company has issued a war map showing armed strength of the world, which is sent free to all applicants who will send their names and addresses plainly written to Wm. McMurray, G. P. A., Portland, Ore.

### GOOD FAIR AT SNOHOMISH

Prospects were never more promising for a good fair at Snohomish, writes J. A. Winston, Secretary. A new poultry building is being erected, more grounds being graded and drained. A good exhibit of pure bred live stock is in prospect. The date is September 22-26.

## DUCKS

## The Best In White Runners

WE ARE NOW OFFERING FOR SALE

## Drakes, Trios & Breeding Pens

Bred from the Best American Strain

Write for prices and booklet

E. E. BLOOMFIELD

Hillhurst, Wash.

Box 22D

## EGGS OR CASH

Directions for getting hens into good laying condition in shortest time possible is given in every package of our Herculean Strike Breaker. Sold by dealers, or write to manufacturer for literature, etc.

E. H. ROMBERGER

Sta. F.

Seattle, Wash.

## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100.

Write for mating list and grit machine circular.

FRED A. JOHNSON

518 35th St., Tacoma, Wash.

## Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. F. ALWARD

Orting, Wash.

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL

Puyallup, Wash.





## Bigger potato profits

pay for this "Iron Age" Digger for the first season! That's what scores of the most successful potato men in the Northwest have told us. This year prices will be higher, because of short crop and great demand by the warring countries of Europe. If you haven't harvested your crop of potatoes yet, investigate the

## IRON AGE

Can be used in heaviest growth of vines and grass. Gets all of the potatoes out of the ground without bruising. Saves an immense amount of labor.

### Send a Postal for the FREE Catalog

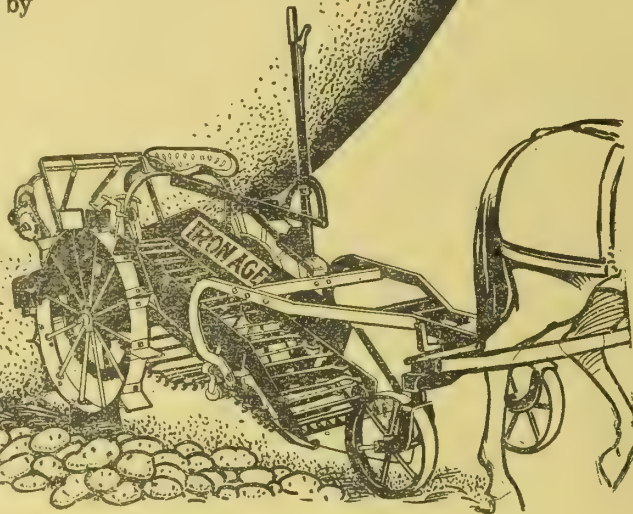
These useful Books on Potatoes will be mailed free to anyone, without obligation! **WRITE FOR THEM TODAY!**

The best dealers in Washington, Oregon and Idaho, sell the "Iron Age" line of Potato Machinery, Cultivators, Sprayers and Garden Tools. **ASK YOUR DEALER ABOUT THEM!**

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**R.M. WADE & CO.**  
SINCE 1865  
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Oldest and Largest  
Independent Wholesalers  
of Farm Machinery in  
the Pacific Northwest.



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### BULBS

For earliest winter  
flowers indoors

Paper White  
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Doz. .40, 100-2.50

ROMAN HYACINTHS  
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CHINA LILIES  
Each .15, Doz. 1.50  
POST PAID

Grow in pots or glasses—  
They are sure to bloom

## PEERADA BERKSHIRES

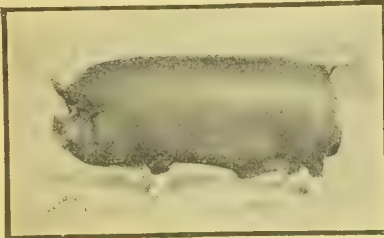
Headed by Artful Masterpiece 3rd  
splendid son of Masterpiece, the  
world's most famous Berkshire.  
Bred gilts, boars and weanling pigs.  
**NEWTON H. PEER**  
Mention this paper TACOMA, WASH.



A herd of the best blood of the best  
strains headed by Champion of the  
Northwest No. 107287, a boar that has  
never been outclassed at any age.

Write for prices.

THE E. N. PEASLEE CO.,  
Clarkston, Wash.



## BERKSHIRES

Meet us at the Western Washington  
Fair

Centralia Duke and Silver Lee, 3rd  
breeding. A fine lot of youngsters  
3 to 7 months for sale. Write for  
particulars and state number wanted.

WOODLAND FARM  
Thurston County Lacey, Wash.

## Purebred Durocs

Very choice young Duroc pigs offered  
at reasonable prices. Early  
application should be made.  
Write today.

We buy and sell  
large quantities of choice hams and  
bacon. Quality is our motto.

AUGUSTINE & KYER  
115 First St. Seattle, Wash

## Electric Light Farm A. J. C. C. Jerseys FOR SALE

Son of Gertie's Brown Lad whose  
dam has official record of 653 lbs.  
butter in one year. The dam of  
this 5-months-old calf made over  
10,000 lbs. milk and 595½ lbs. but-  
ter with first calf. Solid color, mul-  
berry fawn, priced at \$100.00 for  
quick sale.

Burt Pease Ellensburg, Wash.

## Raise Beef Cattle

1240 acres in John Day section of  
Eastern Oregon. All good land. Over  
half of it practically level; 500 acres  
can be put in wheat; balance fine  
bunch grass land. Fenced. Well wa-  
tered by springs; water can be piped  
to buildings and some of the land irri-  
gated. Good house, large new barn  
and outbuildings. Surrounded by thou-  
sands of acres of free range. This  
place will take care of 200 head cattle  
without using the outside range. On  
main county road, mail route and  
phone line; 4 miles from town. Price  
only \$10,000. (Practically \$8 per  
acre.) \$2500 cash, balance 10 years  
6 per cent. If not personally inter-  
ested, perhaps some of your friends  
would be glad to know of this oppor-  
tunity.

Acme Realty Co.  
401 Equitable Building, Tacoma.

GOOD REGISTERED BERKSHIRES —  
Choice pigs, \$10 each at weaning time.  
W. D. GOOD, Mt. Vernon, Wash.

## DUROC PIGS

REGISTERED and REA-  
SONABLE. EITHER SEX  
J. HANKS & SON, Ellensburg, Wash.

## Wanted

A family with some experience in  
poultry raising and fruit growing  
to occupy an improved five acre  
water front property. An ideal and  
beautiful location with excellent mar-  
kets and of easy access. A little ready  
cash required. Will lease or join in  
a cooperative venture for a term of  
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Address T. A. C., care Northwest  
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## BLACK LEG

LOSSES SURELY PREVENTED  
by Cutter's Blackleg Pills. Low-  
priced, fresh, reliable, preferred by  
Western stockmen, because they  
protect where other vaccines fail.  
Write for booklet and testimonials.  
10-dose pkg. Blackleg Pills \$1.00  
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Cutter's Blackleg Pill Injector 1.50  
Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct.  
Use any injector, but Cutter's simplest and strongest.  
Every package dated, unused pills exchangeable for  
fresh after date on package. Do not use old vaccine (ours  
or any other), as it affords less protection than fresh.  
Insist on Cutter's. If unobtainable, order direct.  
Send check or M. O., we pay charges and ship promptly.  
THE CUTTER LABORATORY, Berkeley, California.

## O.I.C. Hogs

English Shire  
Horses

Shire stallions 1 to 3 years old. Write for prices.  
A. L. PIERCE, Granger, Wash.

Pigs farrowed in May,  
from my Champion  
and Grand Champion  
sows at 1913 Washing-  
ton State Fair are now  
booked to fill orders at  
weaning time. All  
stock sold strictly  
first class. English  
first class. Write for prices.  
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NICOLLE'S PRINCE, 97564 A. J. C. C.

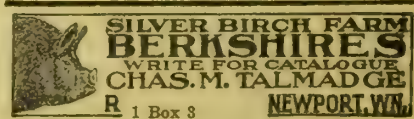
Grandson of Combination and bred  
on Island of Jersey. Solid dark fawn  
and a show bull; he is sound, sure  
and easy to handle, and his calves  
have been nearly all helpers. Price  
\$150.00.

DAVID C. DILWORTH Opportunity, Wash.

## REGISTERED DUROCS

(Immune to Cholera)  
All ages for sale, male or female, from  
prolific families.  
Shamrock Wander heads the herd.  
Shamrock Daisy farrowed 12 pigs.  
Shamrock Rose farrowed 14 pigs.  
Selah Agness farrowed 16 pigs.

Write for prices.  
A. H. IRISH, Wapato, Wash.



WANTED GOATS — To buy two or  
three milk goats; state amount of  
milk at last kidding and oblige  
Peter Eggers,  
15th & Dock. Tacoma, Wash.



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-seventh Year TACOMA AND SEATTLE, WASH., OCTOBER, 1914 No. 10

## VETCH AND OAT CROP.

### Next Summer's Feed For Dairy Cows.

By C. J. Zintheo, Agricultural Engineer, Seattle, Wash.

With the dry summer just passed, and its lack of pasture for cows, the dairy farmer is just now figuring how to prevent the shortage of pasture and milk another season.

It is quite evident that most farmers did not make the proper preparation last year because their silos were standing empty and drying out in July and August when they should have been full of ensilage for summer feeding.

The time to prepare for next summer's shortage of pasture is in the fall up through October. Every farmer has some piece of clover meadow, pasture or other land that needs to be cultivated to eradicate weeds or to put it in the proper rotation and in preparation for corn or potatoes or other crops next spring.

Plow this land as soon as possible from six to eight inches deep. If possible with the manure spreader, put the manure on top of the plowing and disc it in. If the ground has already become too soft for doing this, put the manure on the land before plowing.

When the ground has been thoroughly prepared, use the single disc

drill and sow a crop of vetch and winter oats preferably, but winter wheat or winter rye may be used instead of oats and vetch. Plant forty pounds of vetch to sixty pounds of oats to the acre. A week or ten days after sowing go over the field with a light smothering harrow. If this crop is planted during October, it will be ready to cut by May 20 the next spring. This crop can then be cut and put into the silo, and it will yield about ten tons to the acre. If the field is left alone after cutting it will produce another crop about August, or if left to mature an excellent mixture of vetch and oats can be had, which, when ground and fed to cows in the winter, will make a fine supplement to silage and hay.

### Corn for Second Crop Ensilage.

However, in order to produce more tonnage per acre, it is advisable to plow the field immediately after the first crop of vetch and oats has been removed in the spring. Thoroughly cultivate the soil and with a corn drill put in a crop of corn which, when properly cultivated, will yield at least twenty tons of corn ensilage in the fall.

Thus with two crops a year from the same land it does not require many acres to feed a large bunch of cows and raise everything on the farm instead of buying feed.

The ensilage put in the silo in the

spring should be used in supplementing the summer pasture in July and August, when the weather is hot and flies are plentiful. By keeping the cows close to the barn at this period and giving them plenty of feed instead of having them use their energy chasing all over the pasture in search of feed, the milk supply will be kept up till their next freshening period, which will not be the case if they have been allowed to run down during the short pasture season.

### Silo Filled Twice Yearly, Tightly Sealed.

All dairy farmers who use any brains in connection with their business are convinced that the silo is not only a necessity but the best paying investment on the dairy farm. Not all dairy farmers who have invested in silos have learned how to make the best use of them. The silo should never be allowed to stand empty, but the farmer should feed and file and arrange the rotation of his crops in such a way that he has something to put into it as soon as it is nearly empty. A good many farmers who have modern silos are not careful enough in filling them to prevent spoiling of some silage.

The farmer's wife putting up fruit in a glass jar would not think of for a moment to screw the lid on the jar without putting on a rubber gasket, and yet the farmer does this very

thing with his silo when he closes the doors without putting pitch or some heavy paint on the edges of the doors to make it absolutely air tight when closed. A good many farmers neglect to seal the top of the silo by cutting a load of old straw and distributing it on top of the silage about four inches thick, wetting it and sowing into it a lot of oats, which, when sprouting, will form a perfect seal on top that will prevent the spoiling of any of the silage.

Again, the farmers are negligent when feeding the silage by leaving the doors stand open, permitting a current of air to pass over it and thus hasten fermentation, especially in the summer time.

The farmer who wishes to produce the greatest number of tons of silage per acre and have plenty of feed for his cows next summer should not delay a single day to sow some vetch and winter oats and plant corn on the same land next spring.

### CROP ESTIMATES.

According to the October crop report by the United States government, the total wheat crop for 1914 is estimated at 892,000,000 bushels, or nearly 12 per cent. greater than last year. The corn crop is about 1 per cent. larger than last year, or 2,676,000,000 bushels. The oat, rye, barley and potato crops are all a little larger than last year.



A carload of very choice Holstein cows, purchased by A. Meusreau, Wapato, Wash., from Van Woerden & Fisher, of Thomas, Wash., taken over in the early part of October.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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S. B. Nelson, Veterinarian.

Many of our readers will vote against  
the eight-hour law.

Taxpayers are demanding from can-  
didates for public offices the policy of  
honesty in service without extrava-  
gance.

Much attention is being devoted to  
build up the dairy industry in the col-  
umns of this journal, for the time is  
now at hand when farmers of the  
Northwest can safely and profitably  
increase their dairy herds. The op-  
portunity to obtain the best of cattle,  
the tried out, successful methods of  
solving feed problems, and the con-  
stantly growing markets, make the  
dairy a safe and attractive vocation.

The present European war should  
have the effect of making the Ameri-  
can people more self reliant commer-  
cially. Our manufacturing and com-  
merce should make rapid strides. We  
need big corporations, the kind we  
have now stripped of many unneces-  
sary inflations by close governmental  
scrutiny. In fact we are in condition  
for a good healthy and substantial  
growth as soon as adjustments to a  
new basis have been made and are  
understood. With right living none  
need to have any despair for the fu-  
ture.

The grim reaper is gathering a big  
harvest because of the present war  
of nations, but worse than that is the  
pain, anguish and heavy burdens to  
fall on many of the survivors. When  
the majority of people throughout the  
world will accept and follow the teach-  
ings of the Prince of Peace, then wars  
like that of the present will cease, for  
brotherhood in practice will become  
universal and men will have clear  
enough vision to avoid being led by  
selfish monarchical patriotism. How  
soon this will occur depends upon the  
will and the work of each and every  
individual.

## HOME MARKET FOR APPLES.

The apple crop of the Pacific Coast  
States is about ten million boxes this  
year. The population west of the  
Mississippi river can consume this en-  
tire crop during the next six months

if carefully stored and properly dis-  
tributed. Farmers in Nebraska, Wy-  
oming, the Dakotas, Montana and  
Iowa want our apples and are willing  
to pay good prices on delivery. Our  
fruit distributors associations might do  
well to adopt the nurserymen's plan  
to send out agents a month or two  
ahead of delivery time and round up  
the farmers either direct or through  
their local merchants, booking orders  
ahead so that when a carload of ap-  
ples arrives at a station, previous no-  
tification will bring the farmers to the  
appointed place at the same time. It  
will require a little more machinery on  
the part of the distributors to carry  
out this plan, but the merchants as-  
suming little or no risk, with a good  
volume of business transacted in a  
short time, can afford to handle the  
goods on a smaller margin than is  
otherwise necessary. Consumers  
should have the apples at an average  
of \$1.50 to \$1.75 per box, and the cost  
of delivery figured accordingly.

Beginning with next issue we shall  
again devote more space to poultry for  
the next seven months, with a view  
of helping both the farmer and the  
poultry specialist whose interests are  
mutual.

## WASHINGTON STATE FAIR.

The State Fair of Washington, just  
closed, in some respects was better  
with \$6,000 appropriation than that of  
last year which used over \$24,000 of  
state funds. The question naturally  
arises—are large appropriations nec-  
essary for a successful state fair? There  
is no doubt but what some of the  
funds were unwisely expended last  
season, barring certain improvements,  
but the best fair is one in which the  
people of the locality most interested,  
and of the state can be made to feel  
they have some interest and assume  
some responsibility.

The live stock breeders of Washing-  
ton have taken the right step by or-  
ganizing and they should demand that  
a very liberal proportion of any ap-  
propriation made by the Legislature  
for fair purposes, so specified in the  
bill, be available for the payment of  
premiums to exhibitors of live stock  
and other farm productions whether  
the exhibits are at North Yakima, Spo-  
kane, Puyallup, Centralia or Belling-  
ham.

The State Fair was well handled lo-  
cally by the president and secretary.  
Those representing the state having  
supreme control were deficient in pub-  
licity methods, a very essential feature  
for a successful fair. Less than 10 per  
cent. of the people in Western Wash-  
ington knew anything about a state  
fair being held. A much larger propor-  
tion of people all over the state were  
well aware that the Western Washing-  
ton Fair was being held at Puyallup.  
The State Fair at North Yakima will  
serve a good purpose in being con-  
tinued, but it needs, besides state sup-  
port, the careful attention of those  
who know how to make a fair worth  
while. Exhibitors of good live stock  
and produce should know they do not  
depend entirely on gate receipts for  
payment of awards.

High class quality of exhibits and  
clean entertainment features, coupled  
with neatness and good management  
in every department characterized the  
Western Washington Fair this year as  
usual. The attendance was close to  
the 60,000 mark. It was well adver-  
tised and made good in all attempts.

## OUR OPPORTUNITIES AND RESPONSIBILITIES.

### Preparations for the Demand on Next Year's Crops.

[By Douglas Malcom, of the Interna-  
tional Harvester Company of Amer-  
ica.]

If ever America puts its hand to  
the plow in its effort to feed the  
world, it assumes that responsibility  
now. Not since the harrowing days  
following our own strife of the six-  
ties have the tillable acres of this  
country faced such a possible drain  
upon their bountifulness. Without  
even dimly prophesying the duration  
of the war now raging, we are al-  
ready assured of the fact that next  
year this country will be the store-  
house of the world. Every farm  
owner, every tenant and every share-  
worker will have his part to play  
in fulfilling this great responsibility.  
No matter how remote his residence,  
he will hear Europe's call for beef,  
bacon and bread, and on the amount  
he has to sell will depend not only  
his satisfaction of having served his  
fellow men but the additional satis-  
faction of having served himself; for  
big crops, much stock, many hogs  
next year will mean big profits.

It is thus that the American farmer  
begins his fall work with two strings  
to his bow. With one hand he is  
rescuing the perishing and with the  
other, he is reaching out for tangible  
encouragement toward a bank ac-  
count and a better home.

### Now is the Time to Start.

Now is his opportunity, and this  
month is the time to lay his founda-  
tion. There are two lines along  
which he should plan his work, but  
only one line along which he should  
work his plan. First, he should uti-  
lize every available part of his land,  
and second, he should strive to raise  
the average yield of his farm per  
acre. There will be no danger of  
over-production for the crops sown  
this fall. The man who has a big  
yield will find a big market. But to  
get this yield means better kind of  
farming. Now would be a good time  
to break away from some old-fashion-  
ed ideas about the moon; from some  
other old-fashioned ways of shallow  
plowing; and some old-fashioned care-  
lessness in cultivating; and some old-  
fashioned theories in regard to seed-  
ing. In those parts of the country  
which do Fall plowing and Fall seed-  
ing, the way the seed bed is made and  
the way the sowing is done this Fall  
will determine the crop per acre next  
year more than next year's rainfall,  
hot winds or frosts. In an experi-  
ment not long ago described by F. L.  
Peterson of the University Farm, at  
Davis, California, he says:

"As the pressure for supplies be-  
comes greater, it becomes more evi-  
dent that the world cannot afford  
large farms skimmed over with care-  
less culture. In an actual experiment  
a gain of 200 per cent. which was  
made in the productiveness of a cer-  
tain area, 100 per cent. was found to  
be due to better plowing and harrow-  
ing, 50 per cent. to better cultivation,  
and the rest to better seed."

A lesson or two like that in every  
community would soon work its way  
into farm operation in such a way  
that several costly practices sanction-  
ed by time and custom would become  
in a short time as historical as crad-  
ling wheat and threshing it with a  
flail are now. The great economic

law which makes a man's land profit-  
able is not so much the price he gets  
for his produce as it is the difference  
between this price and the amount  
spent in producing this produce. The  
above experiment was apropos of  
the tractor—a mechanical way of  
plowing, and of disking—a mechani-  
cal way of massaging the land, so to  
speak, and of drilling—a mechanical  
way of sowing the seed. In the cost  
of raising a crop, just the same as in  
the cost of making carpets, shoes or  
wagons, hand power and animal pow-  
er cannot compete with mechanical  
power. The mechanically prepared  
seed bed not only costs less in its  
preparation but it gives forth more  
in its harvest.

### War Makes Horses Costly to Keep.

Oats and oil are in the throes of  
a little war of their own just the  
same as the human back once com-  
bated with the reaper knife. This  
strife is fast becoming more acute  
because the already high price of  
horses is being accentuated every day  
by the number being sold out of the  
country for cavalry mounts to be  
used abroad. The drain upon the  
American horse supply will soon be  
such that wherever possible mechani-  
cal contrivances will be used to do  
their work. Were we to begin at  
once, it will require five years to  
replenish the drain which the war  
has already made upon the horse sup-  
ply of the world. The United States  
Government Department of Agricul-  
ture has estimated that it costs \$75  
to \$80 per year to keep a horse, and  
in a study of horse utility for a period  
covering six years, it was found that  
he averaged only 3.14 hours of work  
per day as his contribution to les-  
sening the high cost of living. In  
contrast with this it was found that  
he ate up the entire yield of one out  
of every five acres which he helped  
to cultivate. It has been shown too  
for every hour he worked it cost  
about sixteen cents: whereas, a full  
horse-power hour can be delivered  
by a high-grade oil engine for only  
two cents per hour, in both cases,  
interest, fuel, food and depreciation  
being included. Again, in plowing,  
a team of two horses can plow only  
about two acres per day. In doing  
this, they travel sixteen miles, which  
is a good days pull for horses with a  
load. A small tractor, on the other  
hand—the kind which costs less than  
six horses, weighs less than six and  
with a capacity doing the work of  
twelve—will plow fully that much in  
an hour or so. It will, furthermore,  
plow deeper and keep it up twenty-  
four each day until the work is com-  
pleted without feeding, resting, or  
growing thin. While it would not be  
wise to dispose of brood mares and  
blooded stock to satisfy the foreign  
buyers, in the end, perhaps, the in-  
creased prices which their purchases  
will undoubtedly bring about will be  
beneficial in forcing thousands of  
farmers to adopt a newer and more  
economical form of power.

Everyone who cultivates 160 acres  
or more is a candidate for a share  
in the millions of dollars which the  
country-wide adoption of this method  
of plowing will ultimately save.

### Insuring Crops in Advance.

After plowing, the first duty of a  
man is to guarantee the work by  
proper cultivation and disking. With-  
out delving into the chemistry of  
plant life too deeply, the growth of  
a plant is determined by the proper  
preparation both in the soil and out



of it, of air, water and certain salt compounds. Rainfall, sunlight and air in conjunction with the soil have a knack of assembling these elements in such a way that the plant grows; or failing to assemble them in such a way that the plant fails to develop. Nature has provided for this intermixture of elements for a limited time and plant life will go on without much outside interference, but, like so many other forms of natural activity, it is possible for human intelligence to greatly increase the effectiveness of nature's work. The disk harrow is one of the leading nature aiders in farming. It is said that rightly used it does more to increase crop profits than any other farm implement and should be used on every farm. It is one of the simplest implements made; one of the easiest to obtain; simple to run; will stand much hard work; and lasts a long time. It is so inexpensive that if used on a fair-sized field, it will so increase the production that it soon pays for itself. In certain parts of the United States, a farm without a disk or two is as curious a sight as a farm without a wagon.

#### Proper Seeding, the Broad View.

After the seed bed is in a condition satisfactory for the proper development of the seed, the next important step is to be sure that the seed is sown just right. It is only within recent years that definite, decisive tests have been made between sowing with a drill and sowing broadcast, but so one-sided have been the various tests in regard to these two methods that broadcasting is fast being numbered among the many old methods which farmers are now discarding. Broadcasting requires more seed, and yet it produces a small crop of lower grade grain. The reason for this is that the seed thus sown is not distributed evenly over the ground. It does not all start from an even depth, nor does it begin germinating uniformly. By the use of an ordinary drill even without the more modern attachments, the seed is deposited in fine, slightly compact, moist soil, all of it at a uniform depth. It is thus carefully covered by the cover chains or press wheels, it all has an even chance of germinat-

ing, and all the grain will tend to ripen at the same time. It requires, furthermore, much less seed to get a good stand with a drill than by broadcasting.

Proper disking and proper sowing are the best ways to help nature give a good crop. There is very little more expense in doing it right than in doing it wrong, and the returns are much greater.

The handwriting on the wall is plainly visible and we should prepare ourselves to meet the crisis before the crisis meets us. It means much, and yet, all that we can do is to do all that we can with the exercise of care and thrift. Our work begins this fall in our plowing and seeding, and our opportunity to help will come next year at our harvesting and selling. We have more at stake than our profits, although our profits will be a goodly stake. We have at stake our commercial supremacy, our agricultural leadership and above this, towering over everything and stifling our selfish hope of gain, or our commercial instincts, is our ability and our willingness to fill the pitiful hands which we know will be stretched out to us from the devastated, wasted fields across the seas.

Statement of the Ownership and Management of the Northwest Horticulturist & Dairyman, as required by the Act of August 24, 1912:

The name of the editor, manager and publisher is C. A. Tonneson, of Tacoma, Washington. The ownership is not an incorporation and there are no bondholders, mortgagees or other security holders holding 1 per cent. or more of total amount bonds, mortgages or other securities.

(Signed) C. A. TONNESON.

Subscribed and sworn to before me this 6th day of October, 1914.

DANIEL MCGREGOR,  
Notary Public, residing at Tacoma,  
Washington.

**READERS** are requested to send information to us pertaining to the best methods of practical co-operation. N. W. Horticulturist Box 1604

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#### A. G. TILLINGHAST

A. G. Tillinghast, pioneer seedsman and proprietor of the Puget Sound Seed Gardens, La Conner, Wash., passed from this life an October 1st, at noon, while on his way from his home to the postoffice. He was 70 years old, a native of Pennsylvania, came to Skagit County, Washington, in 1872, locating at Padilla, where he established a few years later, his present successful seed business, and subsequently moved to La Conner. He was one of the noted cabbage seed growers of the world, his careful methods combined with suitable soils and climatic conditions made competition in his vocation almost impossible. He was broad minded and true, ever aiming for progress in the great work of redemption of man from all that is selfish. He was a member of the Pacific Coast Association of Nurserymen. He is survived by a widow and son, Francis, who have formed the

## FOR FALL SOWING

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Agents "CLIPPER" Fanning Mills

Tillinghast Seed Company, and will continue to carry on the business as now established.

#### APPLE SIZER.

Mr. Fridolf Nelson, North Yakima, invented an apple sizer, for grading apples, which was awarded first prize at the Washington State Fair. Its features are simplicity, accuracy, speed and moderate cost. He is planning to manufacture a considerable number to be ready for use by another year.

#### REGISTERED HOLSTEINS AT CARNATION STOCK FARM.

On Wednesday, November 11, 1914, the first annual fall sale of Holstein-Friesian cattle, including milch cows, heifers, bulls and bull calves, will be held on Carnation Stock Farm. This comparatively new farm, established only a few years, is breeding only registered Holsteins. The farm is located at Carnation, Washington (on the C. M. & St. P. R. R.), in the Snoqualmie Valley, 15 miles from Seattle by auto via Kirkland.

There will be about 72 head of registered stock sold, of which 28 are Holstein cows, all bred, either to Ollie Johanna Sir Fayne No. 59096, or



#### PUYALLUP PIONEER BUYS MAXWELL.

Mr. and Mrs. John Waller, of the Puyallup Valley, in their new Maxwell 25, purchased recently from the Maxwell-Gramm Service.

Mr. Waller is a pioneer of the Puyallup Valley, having lived on his place near the Indian School for nearly 25 years. He has taken much interest in automobiles since their early development, and has worn out one car.

The coming of paved roads through the valley prompted Mr. Waller to get a more handsome car for himself and his family, and after considerable investigation he chose the Maxwell 25.



Dutchland Governor Sir Colantha No. 90477. A number of one to two-year-old Holstein heifers, all of which are bred to Dutchland Governor Sir Colantha No. 90477. About 25 young bull and heifer calves, sired by Dutchland Governor Sir Colantha No. 90477 or Premo Gerben Julip No. 89296 or Lad Ormsby Kakenstein No. 95288.

Judging from the pedigree of Ollie Johanna Sir Fayne, whose sire is Sir Johanna Fayne No. 42147, dam, Ollie Watson Prima Donna No. 71767 (both with high records) as head of the Carnation herd, the cows which are bred and put up for sale can hardly fail to make exceptionally good buys for those interested in buying good dairy stock as well as those who are looking for show stock.

Ollie Johanna Sir Fayne No. 59096, won second prize at the 1913 National Dairy Show in Chicago. During the show season of 1913 he won grand championship honor at a number of leading state and interstate fairs. He is less than six years old and as he develops and matures should rank as one of the best show animals of his breed.

There has been much favorable comment recently regarding the Carnation Stock Farm by numerous visitors. Those interested in dairying and registered Holsteins would give themselves a treat to visit this farm during the time of the sale, even though they would not be interested in buying.

The following is a short list of some of the well known stock which is owned by Carnation Stock Farm:

Ollie Johanna Sir Fayne, No. 59096.  
Dutchland Governor Sir Colantha No. 90477.

Forward Prince Segis No. 125061.  
Inka Princess Mutual De Kol No. 65425.

Queen Ormsby Mutual De Kol No. 65425.

Ruby Pietertje of Forest Hill No. 98867.

Minnie Star No. 76545.

Parthenaea Clothilde Artis De Kol No. 95769.

Mink Tirania Fayne Lady No. 173548.

The Carnation Stock Farm herd is largely made up by purchasing several of the best cows out of a number of different herds in the East. They are shipped to a central point in Wisconsin, and then shipped by express to the Carnation Stock Farm.

Complete reference catalogue of all stock to be sold at this sale is now being printed and will be sent upon request to those interested, as advertised in this paper.

#### DE KALB'S HAMPSHIRE

Mr. H. D. De Kalb of De Kalb, Iowa, breeder of Hampshire hogs, has purchased a farm near Hanford, Washington, on which he will locate in the spring of 1915. Mr. De Kalb's pure bred herd was founded in 1905, making first purchase from E. C. Stone, Armstrong, Illinois. Since then he has followed careful lines of breeding and selection, buying the best animals known of this breed without regard to cost. He held a public sale at Council Bluffs, Iowa, in March, 1913, selling 50 head at an average price of \$108.49 each. Included in the sale at that time was the highest price sow ever sold of this breed—Jennie Aylor which brought \$460.

In the spring of 1914 another public sale was held of 67 head, principally young gilts which averaged \$87.50 each. For his present herd sire, a son of Jennie Aylor, he has been offered \$1250. This boar measures 75 inches in length from nose to root of tail, 72 inches heart girth, stand 36 inches high, 9 3/4 inches leg bone and weighs 775 pounds at 2 years of age. This herd contains 25 sows which average 650 lbs. at 3 years of age. These hogs are easily developed to a weight of 250 lbs. at 8 months. This herd is said to be the best of the Hampshire breed

in the United States and the people of Washington particularly those who are interested in the development of the swine industry have reason to be elated because of the acquisition of so prominent a breeder to this State.

#### FRYAR'S OCTOBER CATTLE SHIPMENT

Mr. B. S. Fryar returned from the east early this month with 60 head of pure bred and high grade Holsteins and 30 Guernseys.

Of the Guernseys, 10 are registered having definite producing records back on both sides of high merit. The others are all of good dairy type well up near the pure bred line, some of them fine 2 year heifers, some near fresh cows and some youngsters.

The Holsteins are mostly fresh and near fresh cows of deep milking capacity, quite a number of young heifers and some young registered bulls.

Mr. Fryar's old customers are now making a growing demand for pure-bred sires.

They realize it pays to breed up, getting a little larger milk and butter producing capacity out of each following generation and this can best be done by the use of a sire with records of value back on both sides to indicate his worth as a breeder.

Another way to get into the pure bred line at least cost, is by purchasing pure bred heifers. While it takes some feed to raise them, most dairymen who have made their start by that method have made it pay well. Mr. Fryar has now on hand a very large and choice collection of dairy cattle having had in view the needs of numerous dairymen in the Pacific Northwest at the present time.

#### SHEEP AND MUTTON

Farmers in the Northwest, particularly in the coast section are giving but little attention to sheep raising for mutton. Small flocks could be kept profitably on many more places than is done at the present time. A few suggestions along this line here following are given by the Information Office, U. S. Department of Agriculture.

#### COTTON SEED MEAL

Cotton seed meal is selling at low prices in the south and it seems a good time to use it in fattening young cattle in connection with other feeds.

## Farmers Like the MAXWELL=25

The Maxwell 25 is proving just as popular with ranchers as with city buyers.

Of the first carload delivered to us, half went to country owners.

It is so handsome, yet so sturdy and economical, that it appeals to the whole family.

Less than a cent a mile for gas, as well as the low price of the car to begin with, strikes the man.

The beautiful lines of the car, its comfort, and the electrical starting and lighting, appeals powerfully to the woman.

But the best way to tell you about it is to show you the car itself.

Call at the show room, corner 7th and C Streets, or if you cannot call, write or phone us.



Cor. 7th & C St. Tacoma, Wash. Main 3328

When fed in connection with corn and clover or alfalfa there is profit in using the cottonseed meal at \$22 to \$24 per ton f. o. b. southern points.

#### GUERNSEYS AT OHIO STATE FAIR

According to the Guernsey Breeder's Journal there were 61 head of Guernseys exhibited at the Ohio State fair this year, all choice animals

Mr. E. H. Baker, Gates Mill, Ohio, the father of Mr. Frank S. Baker, Tacoma, proprietors, Tacoma Daily Tribune, showed 19 head and won first on senior sire, Governor of Kee-waydin, and first on senior cow, Imp

Glenora, of the Gouies, besides many other prizes on young stock.

Other exhibitors were R. D. Gates, Novelty, Ohio, with 14 head; The Village Farm of Grass Lake, Mich., with 14 head; E. C. Peck, of Macedonia, Ohio, with 10 head; and W. D. Phelps, Columbus, Ohio, with 4 head.

Ohio had 258 Guernseys in advanced registry work last year.

The Guernsey sire Melba's Prince, owned by Elmer Lenfest, was exhibited at the Snohomish County Fair. He was an object of much attraction to those interested in Guernseys.

## SYRUP MADE FROM APPLES.

Department of Agriculture Applies for Public Service Patent. Will Enable Cider Mills to Make a Keeping and Valuable By-Product Out of Excess Cider.

Following extensive experiments begun last spring, the head of the fruit and vegetable utilization laboratory of the Department of Agriculture has applied for a public service patent covering the making of a new form of table syrup from apple juice. This patent will make the discovery, which the specialists believe will be of great

value to all apple growers as a means of utilizing their culls and excess apples, common property of any cider mill in the United States which wishes to manufacture and sell apple cider syrup.

The new syrup, one gallon of which is made from seven gallons of ordinary cider, is clear ruby or amber



## Holland Bulbs

JUST ARRIVED. EVERYTHING IN NURSERY STOCK. PRICES THE LOWEST. ASK FOR OUR NEW CATALOG.

**MT. VERNON  
NURSERY**

MOUNT VERNON,  
WASH.



colored syrup of about the consistency of cane syrup and maple syrup. Properly sterilized and put in sealed tins or bottles, it will keep indefinitely, and when opened, will keep under household conditions as well as other syrups. It has a distinct fruity aroma and special flavor of its own which is described as being practically the same as the taste of the syrupy substance which exudes from a baked apple.

The syrup can be used like maple or other syrups for griddle cakes, cereals, household cookery, and as flavoring in desserts. The Government cooking experts are at present experimenting with it in cookery and expect shortly to issue recipes for use of the new syrup in old ways and for taking advantage of its special flavor in novel dishes.

The Department chemists have already produced over ten gallons of this syrup in their laboratories, using summer and other forms of apples. The success of the experiments has greatly interested some of the apple growers, and during October a large cider mill in the Hood River Valley, Oregon, will in cooperation with the Government chemists, endeavor to produce 1,000 gallons on a commercial scale and give the new product a thorough market test by making it accessible through retailers in a limited field. The interest of apple growers in the product arises from the fact that the new apple cider syrup promises to give them a commercial outlet for vast quantities of windfall and other apples for which they hitherto could find no market either in perishable raw cider or in vinegar. Cider production, it seems, comes largely at one season of the year during which the market is more or less flooded with this perishable product. The bulk and perishability of the raw cider, moreover, the cider makers state, often make it unprofitable for them to ship the raw cider of one district long distances to a non-apple-growing region. The market for cider, therefore, has been largely restricted in many cases to localities near the area of production. No method of sterilizing ordinary cider has been found practical for the reason that boiling cider at once interferes with its delicate flavor.

With the cider mill able to make a palatable, long-keeping table syrup out of its apple juice, growers, it is believed, will be able to use all excess juice for bottled or canned apple syrup. The new syrup, the specialists find, will keep indefinitely, so that the cider makers can market it gradually throughout the year.

The process for making the syrup calls for the addition to a cider mill of a filter press and open kettles or some other concentrating apparatus. The process is described as follows: The raw cider is treated with pure milk of lime until nearly, but not quite, all of the natural malic acids are neutralized. The cider is then heated to boiling and filtered through a filter press, an essential feature of the process. The resultant liquid is then evaporated either in continuous evaporators or open kettles, just as ordinary cane or sorghum syrup is treated. It then is cooled and allowed to stand for a short time, which causes the lime and acids to form small crystals of calcium malate. The syrup is then re-filtered through the filter press, which removes the crystals of calcium malate and leaves a syrup with practically the same

basic composition as ordinary cane syrup. Its flavor, however, and appearance are distinctive.

Calcium malate, the by-product, is a substance used in medicine and at present selling for \$2 per pound. It is believed that if calcium malate can be produced in this way cheaply and in large quantities, it can be made commercially useful in new ways, possibly in the manufacture of baking powder.

The cost of making this syrup on a commercial scale will be determined during the test in October.

#### HOME CLASSES IN PRACTICAL FARMING

Department of Agriculture in Cooperation with State Colleges makes Available Textbooks, Lectures, Lantern Slides, and Laboratory Equipment,

A plan whereby ten or more farmers or farm women can form home classes in agriculture or domestic science and receive the textbooks, lectures, lantern slides, laboratory and cooking equipment necessary to conduct them has been devised by the U. S. Department of Agriculture in cooperation with Agricultural Colleges of certain States.

The object of the plan is to make accessible at home, to men and women who have not the time or means to attend the regular courses at the colleges, practical short courses in agricultural and home management specially adapted to their districts. These courses, which will consist of 15 to 20 lectures, and will consume five or more weeks, can be arranged to suit the spare time and convenience of each group of people.

The courses to be offered at first are poultry raising, fruit growing, soils, cheese manufacturing, dairying, butter making, and farm bookkeeping; and for the women especially, courses in the preparation, cooking and use of vegetables and cereal foods. The Department will supply lecture and lantern slides covering these subjects, and the States which have agreed to cooperate in the plan will lend to each group laboratory and cooking apparatus valued at \$100 and a reference library. The textbooks and lectures will be made so complete that each group can safely appoint one of its members as study leader to direct the work of the course.

When a group has decided to take up the work, the State which cooperates sends an agent with the Department's representative to organize a sample class and assist the leader whom they elect in laying out the work and in showing him the best methods of procedure. The classes commonly are held from 8:00 to 12:00 in the morning and from 1:00 to 4:00 in the afternoon, two or three days each week. The sessions are not held every day, so that the members will have time to attend to their farm duties in between the sessions, as well as before and after the instruction. The classes meet commonly at the most convenient farmhouse. During the morning hours, textbook work is done. In the afternoon laboratory work is conducted, and the women who have elected to take the domestic science courses have practical lessons in cooking.

Not all of the States have yet agreed to cooperate in this plan. Last winter experiments along these lines were carried out successfully in

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OR PAIN KILLER FOR THE HUMAN BODY

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IT HAS NO EQUAL

For the Human Body

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

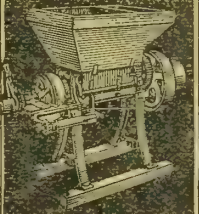
A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

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Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."

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It tells of experiments in feeding live stock both ground and unground grain, alfalfa and kafir corn—also shows how 25% can be saved—shows values of different foods—tells about balanced rations—describes

### STOVER AND IDEAL FEED MILLS

To get it simply write—Send me your book LIVE STOCK AND GROUND FEED.

### STOVER MFG. CO.

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SAMSON WIND MILLS—ALFALFA GRINDERS  
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## FINE GOAT RANCH

800 acres of good land. Over half of it can be plowed when cleared. Balance fine pasture. Watered by creeks and springs. Located on the Northern Pacific Railway between Portland and Tacoma. Price \$15 per acre. Good terms. The best proposition for a goat ranch in Western Washington, subsequently to become a dairy farm. This opportunity merits careful consideration by any prospective stock farmer.

ACME REALTY COMPANY  
401 Equitable Building, Tacoma.

## FARMS WANTED

Wanted to hear from owner of good farm or unimproved land for sale. Send description.

NORTHWEST BUSINESS AGENCY  
Minneapolis, Minn.

## Lilly's Vetch Clover Grass Seed

### For Fall Planting

These important crops call for careful and studied seed selection. Cheap, inferior seed is expensive at any price. Lilly's best seeds are

**99% Pure**

—and we can furnish all seed tested for purity and germination. Don't take chances. Buy the best. We make a specialty of grass and clover seed and stand ready to back up our claims for supplying the best seed possible to get.

Sold through dealers in Lilly's Trade Marked Sacks

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Mailed free on request.

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Big money will be made raising wheat next few years. We have some fine, well improved wheat farms in the best wheat raising section of Eastern Oregon, \$22.50 to \$25 per acre. Easy terms. Write us and mention this paper.

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## Strawberry Plants

FOR SALE

Marshall, Magoon and Goodell  
Our plants are as good as the best and cheaper than most.

W. F. GOULD & SON  
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## Small Fruit Plants

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| Blackberries | Gooseberries |
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Write for prices.

**F. H. Burglehaus**  
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Saved  
**\$175.00**

Received lumber O.K. Shipped the 10th, got here 25th. It is better than I could get here and saved about \$175, enough to build my barn.

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So. Dakota

### These 4 Farmers Saved \$1144 on Lumber

**Got better lumber, too**

They bought direct from Hewitt-Lea-Funk Co. Through our officers, we own the forests and mills, and sell users direct, the finest of fir, red cedar, spruce, yellow pine, hemlock, etc., at very great savings.

**Write now for H.-L.-F. catalogs and prices**

Saved  
**\$250.00**

The material was all better graded than local yards figured. I had enough material left for a few small sheds. You saved me at least \$250.

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Saved  
**\$393.60**

Lumber O. K. We had two of our lumber dealers inspecting our lumber, but they had no chance to shoot hot air into us. We saved over 40% (\$393.60).

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**Hewitt-Lea-Funk Co.**  
Capital \$1,000,000  
Not in any trust  
393 Crary Bldg., Seattle, Wash.

Saved  
**\$326.00**

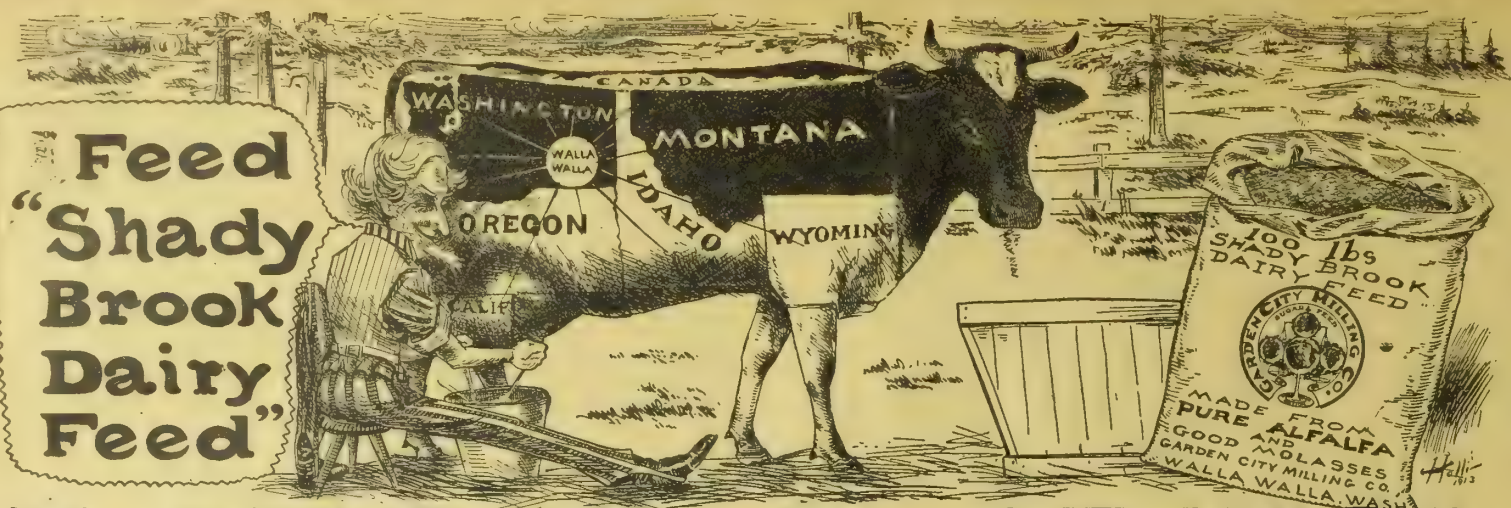
We feel greatly indebted to you for the quality of lumber, prompt delivery and prices. The same quality lumber here would have been nearly one-half more.

J. O. JOHNSON,  
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Improves Quality Increases Quantity

Produces More Milk Less Cost



Feed  
"Shady  
Brook  
Dairy  
Feed"

## You Will Find Your Answer In The Milk Pail

Leading dairymen all over the Northwest are using large quantities of it. They begin with about one quart of Shady Brook Dairy Feed per head twice daily—mixing with bran, shorts or other ground feed, for three or four days; then gradually increase the Shady Brook and decrease other feed until from four to seven quarts are used at each feeding.

If your dealer does not handle it, write us.

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Pennsylvania, and this has stimulated and interest in the method in other States. In one of the Pennsylvania classes more men applied than could be accommodated, and all of the 20 men and 15 women who began the course completed it. Pennsylvania is now arranging for more classes while Massachusetts, Michigan, Vermont, Florida and other states expect to take up the work.

### A PORTABLE FRUIT EVAPORATOR

At the Washington State Fair was on exhibit a portable fruit evaporator made in two sizes, of galvanized iron, simple in construction but very efficient and economical in operation. It was designed and made by Mr. T. J. Redmon, North Yakima, but not patented for the reason that Mr. Redmon desires its extensive use in the orchards generally in order that fruit growers may realize a fair margin of profit when unable to market fruit otherwise, his principal business being the manufacture of irrigation pipe.

The small, or one-man size, as that illustrated has a direct air draft; hot air entering at the bottom and going up through the trays and carrying the moisture out at the top. Fire box is 18 inches in diameter by 60 inches long. The Evaporator holds 40 trays,

operate in from 16 to 24 hours; apples from 2 to 6 hours.

The cost without trays is about \$75. Trays are worth about \$25 per set.

The two-man size has about double the capacity of the One-man size. The fire box is 18 inches in diameter by 60 inches long. Evaporator holds 68 trays, 3 feet square. The peculiarity of this is that the draft is across the trays instead of up and through them. No moisture from one tray touches any other tray of fruit. This is about double the cost of the smaller sizes.

The trays may be made of galvanized wire mesh fastened on frames to fit the evaporating compartments.

For a cheap and hurried construction the evaporator can be made of boards, preferably flooring, and lined with asbestos paper. But for endurance and figuring for several years work the galvanized iron made evaporator no doubt will serve the best purpose, most economically.

A grower near Zillah, Washington, dried some peaches, which cost him about 1½ cents to dry and was offered 8½ cents a pound for the dried fruit afterwards. This would figure as equivalent to about 50 cents per box of the fresh fruit. It would not take a large orchard to pay for one of these evaporators, at this rate.

Where there is a surplus of winter apples not moving at fair prices, the growers might do well to figure on having some of these galvanized evaporators made. A little experimenting will soon enable the orchardist to produce a desirable evaporated product and when hundreds are in use, there will then be created a staple market with ready bidders for evaporated apples in the Pacific Northwest as is now the case with dried prunes.

### APPLE MARKETING COMMERCIALLY.

The Office of Markets, U. S. Department of Agriculture makes the following suggestions on the commercial marketing of apples, this season in a recent letter:

Growers who live in communities where cooperative organizations are

operated should do all possible to strengthen these exchanges. It is asserted that the disloyalty of members is the chief element of failure in cooperative enterprises, and growers are strongly urged to support their association as the best way to effect satisfactory distribution.

Those who grade, pack, and brand their barrels in accordance with provisions of the Sulzer law should be more successful in making quick and satisfactory sales than otherwise. When apples are packed in a standard barrel as established by section 1 of the Sulzer law, and are plainly and conspicuously marked as containing one barrel of apples of one of the standard grades described in section 2, such a statement if true would constitute a satisfactory compliance with the net-weight amendment to the food and drugs act. Otherwise the package, if intended for interstate commerce, must be marked to comply with the net-weight amendment to show the quantity of the contents, either by weight or by dry measure or by numerical count. A statement of numerical count must be qualified by the size of the apples expressed as the average diameter in inches to be a statement of quantity.

[The same rule holds good to boxed apples.]

With respect to Europe, the Office of Markets urges exporters to carefully watch the movement and assure themselves of steamer space and a

demand on the other side before making shipments. Latest announcements of steamship companies are to the effect that fairly regular schedules will be maintained between America and the United Kingdom.

American apple shippers are advised to stimulate the demand and increase their shipments to Latin America and the Orient. It is suggested that by cooperating with the Department of Commerce, extension of trade in this respect can be accomplished. Inquiries relating to these countries should be addressed to the Bureau of Foreign and Domestic Commerce, Washington, D. C. Shippers are urged to apply to the superintendent of documents for the following publications issued by that bureau, which may be secured at the prices shown: Special Agents' Series, No. 62, 30 cents; No. 72, 10 cents; and No. 81, 25 cents; Special Consular Reports, No. 62, 10 cents; and Tariff Series, No. 19a, 5 cents. Remittances should be in cash or by money order. Stamps are not accepted. Attention is called to an announcement of the Department of Commerce that it will aid in every practicable way.

For the benefit of those who may not be disposed to exercise especial care in handling the crop, on the grounds that it will not be worth while, the Office of Markets suggests it as probably being true of this year that not only proper handling, but also great diligence will be required for effecting satisfactory distribution.

## AGRICULTURE

## The Basis of Prosperity

### ORGANIZATION AMONG FARMERS.

T. N. Carver, Director of Rural Organization Service, U. S. Department of Agriculture, treating the subject of organization of rural interests in a recent year book, says there is no magic about cooperation. If, as the result of cooperation, farmers are led to improve their business methods, it will succeed; otherwise it will fail. These improvements in their business methods should include the following

points:

(1) Accounting and bookkeeping. No cooperative organization of any kind can hope to succeed, nor would it deserve to succeed, unless it keeps its books accurately and completely. Correct accounting is the key to all successful administration, public or private, cooperative or individualistic.

(2) Auditing. No one with any feeling of responsibility will undertake to advise a cooperative society or stand in any way responsible for its affairs, unless that society will submit its



3 feet square. Holds about 16 boxes of green apples at one charge, or about 60 boxes of peaches. Peaches evap-



books annually for a thorough auditing by a competent and reliable auditing company.

(3) Motive. It must be prompted by a constructive desire for well-understood economies and not by rancor, or jealousy, or covetousness, or any other destructive sentiment. One of the most frequent causes of failure in cooperative enterprises is the fact that the whole enterprise was started out of something very closely resembling spite, or the fear that somebody might be making something in the way of profit. If a storekeeper or anyone else is making a profit by reason of efficiency with which he runs his business or serves his customers, he is entitled to it, and any cooperative society which is started merely for the purpose of keeping him from making that profit is doomed to fail. If, however, there are clearly perceived wastes occurring, due to inefficiency, bad management, or the taking of excessive profits, and a cooperative society is formed for the constructive purpose of eliminating those wastes through better management, the society will have the first requisite of success, namely, the fact that it deserves to succeed.

#### In Marketing.

The general subject of marketing is provided for under the capable management of the Office of Markets of the Department of Agriculture. Inasmuch, however, as the subject of organization is very closely associated with the subject of markets, and the Rural Organization Service and the Office of Markets are working in the closest cooperation, it is not out of place to suggest here a few of the main conditions of successful marketing. They are:

(1) The improvement of the product. This ought to be one of the first results of cooperation. A group of farmers, all interested in growing the same product, by meeting frequently and discussing the problems connected with the growing of that product, will normally educate one another and thus improve their methods of production.

(2) The standardization of the product through organized production. Standardization follows naturally and easily if the cooperators are wise enough to see its importance. Not only must the product be a good product, but it must be graded according to the tastes or desires of the consumers or ultimate purchasers. If the producers insist on throwing an unstandardized, nondescript product upon the market, the consumers, each one of whom wants a small and simple parcel, and wants that to be of a certain kind and quality, will never buy of the producers. Some one, then, must intervene to do the grading and standardizing. But if the producers will grade their products and pack them the way the consumers want them, they will be able either to sell directly to the consumer or so to reduce the toll charged by the middlemen as to enlarge their own profits.

(3) Branding. An excellent product, graded and standardized, must then be so branded or trade-marked as to enable the consumer to identify it or to recognize it when he sees it. That is really all there is to the stamp on a coin. It adds nothing to the intrinsic value of the metal, but it makes it circulate. Without such a stamp, each individual would have to weigh and test a piece of metal which

was offered him, and the circulation or salability of the metal would be greatly restricted; but a stamp upon it, which the average receiver recognizes at once and in which he has confidence, makes him instantly willing to accept it. This may be an extreme case, but it does not differ in principle from the stamping of any other salable piece of material. A private stamp is quite as good as a Government stamp if people have as much confidence in it as they have in a Government stamp and if it is as reliable and as uniform. Private coins have circulated many times in the past. However, without taking such extreme case as the coinage of metal except by way of illustration, it will not take much argument to convince the average person that if a box of apples bearing a certain stamp or trade-mark gets to be known as reliable and good all the way through, the producer or the producing association whose stamp has thus gained confidence will be able to sell where unstamped products equally good will fail altogether.

(4) Education of the consumer. The consumer must be educated as to the meaning of a stamp or trade-mark on goods which are excellent in themselves and uniform in quality.

Let these four things be done and the problem of marketing will become fairly simple. But it must be remembered that these four things can be done only by organization.

#### COTTON SEED OIL IN FOODS

Germany, the Netherlands, and other northern countries, like ourselves, are not fond of eating pure oil, but need more butter than the cattle produce, so they resort to artificial butter and have developed it to a high degree of palatability. The surprising statement is made that the principal countries of northern Europe are now making artificial butter ("margarin" they call it") to the extent of 580,000 tons per year, and the significant part of the story is that in 1913 they used as an ingredient over 300,000 barrels of cottonseed oil from America, and, according to E. W. Thompson, Commercial Agent, U. S. Department of Agriculture, are planning for an increase in 1914.

By their recently discovered process of solidifying liquid oils, cottonseed oil is now beginning to compete with hard coconut oil, which sells at even higher prices than olive oil, and is becoming very popular as an ingredient of artificial butter.

#### SEED CORN, SELECTION, STORING

Better yields are obtained where the seed is saved from home-grown corn than from corn which seems to be equally good, but brought from other places. The best success will result when farmers save the best ears of corn from their own fields for seed. If a farmer, contemplating growing corn next year, does not have seed of his own to save he should get permission to select some of his neighbor's.

It is necessary to give more care to seed corn than most other farm crops because it matures late in the season and contains more moisture than such crops as wheat and oats, which mature earlier in the summer. It should be hung up in a place that is dry, where the air may circulate freely to prevent molding and so it may become thoroughly dried before cold weather sets in. If corn remains

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## EUREKA Harness Oil

It seals up the pores and keeps out the destructive elements. It keeps your harness soft, pliable and strong; preserves its original inky-black color. It contains no acid or other injurious ingredients. Dealers everywhere.



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## The Puyallup Nursery

Hardy Ornamental  
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Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Shipping season begins in October.

Everything worth while in Roses, Gladioli, etc. Send for list.

Specimen Grounds, 702 PIONEER AVENUE, EAST  
A. LINGHAM PUYALLUP, WASH.

## ALFALFA HAY

#### From Grower Direct to User

This Hay is grown on our ranch at Mabton, Wash., and is cut and cured so as to afford the highest feeding value.

Order now because the price of hay will rise as winter approaches.

### KARR INVESTMENT CO.

16 North 6th St.  
NORTH YAKIMA, WASH.

## VETCH CLOVER and other GRASS SEEDS

GET your orders in early to make sure of minimum price. Remember ours won't stay in the ground. They grow. Catalog and price list on application.

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## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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### Loganberry Plants

We have a full line of Loganberries, Mammoth Blackberries. Also choice grades of nursery stock and will be pleased to have you make your wants known to us. Would like to get in touch with some good live salesmen. Good opportunities. Write for particulars.

Address

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G. W. Pennebaker, Mgr.



damp for a long time, even though it may not appear to be moldy, or if it freezes before it is dry, the vitality and vigor will be reduced. In this condition it will either not grow, or it will produce weak stalks when planted next year. More than enough seed corn should be saved so that the less desirable ears may be discarded when the grain is shelled and prepared for planting.

In drying and storing it should be remembered that each kernal is a living plant. In order to retain strong vitality, which is at its maximum at the time of maturity, the ears must be dried and carefully preserved. Special drying racks are sometimes used for this purpose. A simple method, however, which is often employed is that of fastening a number of ears together with a single or double string. By this means twelve to fifteen ears may be fastened on the same string and suspended from the rafters of an attic or other suitable place. The important thing is that seed corn be saved before it is used up for other purposes or before it loses its vitality. The possibility of making corn a successful crop in Washington depends largely upon use of acclimated seed, and improving the seed now grown in the State.

E. G. SCHAFER,  
Farm Crops Dept., Pullman, Wash.

#### WASHINGTON WATERS EXCELLENT FOR MANUFACTURING

\* A report that should be of no little value in development of the water resources of the State of Washington has just been published by the United States Geological Survey as "The Quality of the Surface Waters of Washington," by Walton Van Winkle. It represents the results of nearly two years' examinations and the first systematic study of the chemical composition of the waters of the State. Little has heretofore been known regarding the character of the waters around Puget Sound or those in the huge network tributary to Columbia River, and consequently waterworks and waterconsuming factories have located to some extent blindly; but by the data now available prospective manufacturers are enabled to select supplies suited to the peculiar needs of their industries.

#### Waters Similar to Those of New England.

The studies have shown that the mineral waters of Washington are low in mineral content and are excellent for general industrial use and for irrigation. What little suspended matter they carry is coarse and readily removable. The color of some renders it advisable to purify them by coagulation and rapid sand filtration rather than by slow filtration. This is contrary to the general belief, which has classed all Western waters as "alkali," or "hard," or "bad," for the studies have shown that most of the surface waters of Washington are comparable in quality to the extremely soft waters of New England, which are so extensively used in all lines of manufacture.

The muddiest and most strongly concentrated water examined, that of Snake River near its mouth, after the stream has traversed an arid plain, contains only 130 parts per million of dissolved and 52 parts of suspended matter. The drainage of the Coast, Olympic, and Cascade ranges, as indicated by analyses of water from Skagit, Cedar, Green, Chehalis, Wy-

noochee, Klickitat, Naches, Yakima, and Wenatchee rivers, and, Wood Creek, carries less than 90 parts per million of dissolved solids, and several mountain streams frequently carry as little as 50 parts. The report contains the first serial analyses of the water of Columbia River, from which daily samples were collected for a year at Northport and Pasco and for two years at Cascade Locks, the lowest place on the river unaffected by tides. All the waters are of the calcium-carbonate type. The content of sulphate is not large and chlorine is very low. Iron is generally so low as to be almost inappreciable. Silica, though not present in very great quantity, constitutes a large proportion of the mineral matter.

#### No Soda Lakes.

The beds of the coulees in the Big Bend region contain several small and a few large lakes, many of which are really playas, or intermittent shallow pools. All contain carbonate water but none is known whose water is economically important as a source of commercial salts. They contain a greater proportion of common salt than the lake waters of Southeastern Oregon and are therefore less valuable for the recovery of soda.

The work, which was conducted in cooperation with the State Board of Health, comprised collection and examination of daily samples of water from principal streams throughout a year; in addition to the complete analyses made in this way daily estimates of chlorine and alkalinity of most of the waters have been reported as an aid in the proper adjustment of purifying agents in case of filtration. The volume is illustrated by a map of the State and it also contains much information regarding the courses of the streams and economic development within their drainage basins. It has been issued as Water-Supply Paper 339, and copies of it can be obtained by addressing the Director, United States Geological Survey, Washington, D. C.

#### CEMENT TILE PROPERLY MANUFACTURED.

##### Durable When Correctly Made

Editor, Northwest Horticulturist and Dairyman: Please allow me space in your paper to answer a communication from my esteemed friend, Mr. W. H. Kaufman, of Bellingham. In the first place, I will state my business which is that of manufacturing of cement tile and cement goods of all kinds.

There are four essential points in this business; first, a clean sharp sand; second, the best and most powerful machinery made for the purpose with plenty of power to drive the same; third, a proper knowledge of how to mix the cement and sand as well as just how to wet, to mix, and adjust the machines; and fourth, but not least, the art of curing the goods properly.

Of the first I will say clean sharp sand is a very scarce article here in Whatcom County. Without clean sharp sand one had better stay out of the business for you will soon go out with less money and more experience, besides hurting the farmer and the man who has the clean goods.

As to the second, cheap weak poorly constructed machinery poorly handled will make a failure of the best cement and sand made. There is a

## Quaker Trees

FRUITS  
ORNAMENTALS  
SHRUBS

A Fine Stock of Apples, Pears, Peaches, Plums, Prunes, Apricots and Small Fruits.

It is a good year to increase the ornamental planting. Thousands will come to the Pacific Coast seeking homes during the next few years. Do you wish to sell any part of your land, or your home place, or do you wish to encourage settlers who have some degree of taste and refinement? Then adorn your home with some ornamental plants, shrubs and trees. The cost is trifling compared with the actual value which may be derived. Our catalog contains valuable suggestions.

Write for catalog and price list today. State your requirements.

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## DONALD GROWN NURSERY STOCK

That is what you want. Now is the time to make arrangements for your fall's requirements. Mail us your want list for quotations and ask for our illustrated descriptive catalogue.

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SALESMEN WANTED.

## BEAUTIFY YOUR HOMES

We are this season enjoying an unusually good trade on shade and ornamental trees, vines, shrubbery, etc. For years the western home-builder has devoted all his energy to creating a productive plant. Today his thoughts are turned more to home-making in the fullest sense of the term. This requires a well disposed arrangement of properly selected trees, vines and shrubbery, and this need we are well prepared to supply. We have devoted much time and effort to securing the proper class of ornamental stock for all sections of the West and Northwest, and the wisdom of this policy is exemplified in our largely increased business in this line, together with a good volume of orders for deciduous fruits, berries, grapes, etc.

Our salesmen cover practically every city and hamlet west of the Rocky mountains. If they fail to see you, address us, giving indications of your wants, and we will be pleased to reply in detail, together with catalog.

We have a well equipped landscape department in charge of a qualified landscape architect, whose advice is to be had for the asking in connection with any order we book.

Our stock is, as usual, unsurpassed. It is grown on clean, new volcanic ash soil, far distant from old orchards or other sources of contamination. It is clean, well rooted, hardy and splendidly matured. We solicit your patronage, and guarantee you satisfaction.

All transportation charges prepaid to destination on every purchase.

WASHINGTON NURSERY CO.,  
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Salesmen Wanted.

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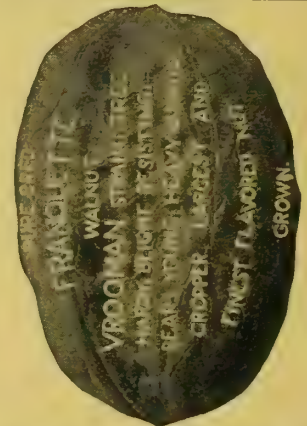
We make a specialty of vetch seed and you will find our prices the very lowest.

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We are located in the best clover producing country in the U. S. and buy the very best lots for our own use.

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D. A. WHITE & SONS  
SEEDSMEN  
Salem, Oregon



## Have You Read This?

"At my home on Nob Hill, I have two Walnut trees which I purchased from your Company. They are now thirteen years old; were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from those two trees last fall. My grocer pronounced them superior in size and flavor to California nuts."

E. W. Brackett, North Yakima.  
Space here forbids much explanation, but if you will write us, we will gladly explain the difference between the famous VROOMAN PURE STRAIN FRANQUETTE WALNUT and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc., in the West. ORENCO trees are planted from coast to coast because they are known to be always—dependable—first class.

FILBERTS — Good plants of such leading varieties as Barcelona and du Chilly.

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Vancouver Bk., Vancouver, B. C.  
Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

Red and  
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Place orders early to get lowest wholesale price. Sample sent if desired.

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Salem, Ore.



powerful strain on the machine that properly packs the tile that cheap machinery will not stand up to. The greatest failure comes from this one source. My machines are very strong and accurate and have plenty of power to drive them. They are of the Underhead packing type. My tile are packed hard enough that I only use three casings in making 350 tile per hour. There is no other make of machines that will do this.

Third, as to the proper knowledge of making cement goods. If you have not got this knowledge get it before you start into business for yourself. Don't read advertising of cheap machinery of the so-called fool-proof machinery and expect to make a success of the cement business.

Fourth, now as to the curing of cement tile. The walls of tile are very thin and of course dry very rapidly and if allowed to dry too quick will render useless the best made tile. My tile is kept clear of the wind and sun for at least three days under the natural curing process. For thirty days afterwards are kept wet in the pile. The latest and most modern process is the steam curing and that is the process that I have used the last year and will use in the future. My tile is set on trucks and run immediately into a room 16x120 feet, filled with live steam from my engine and kept at a temperature of 120 degrees. The steam condensing on these tile cures it as much in 48 hours as 21 days under the natural curing process. I find by statistics that this cheap grade of tile will go down in rain water just as quick as in the worst peat bogs.

I have sold more than 125,000 feet of tile to the farmers of Whatcom County. Part of this going into the worst peat bogs of the country, and after being in for 15 months is in perfect shape to-day. I find that the failure of tile invariably comes from cheap machines which do not properly pack the tile and which is not properly cured. It does not come from the acids in the soil.

I will be glad to answer any direct inquiry and give any information to one who wants to start into the business right. The quantity of tile made by the cheap machines does not hurt my business but it is the quality.

E. W. BAYES,  
Lynden, Wash.

## EXPERIMENTING WITH PEAS.

Knowledge merely extends our horizon; and the farther we can see, the more things there are of which we know ourselves to be ignorant.

When I became convinced some years ago that peas were one of our most profitable crops there was just one question I wanted answered—"What is the best variety?"

Having learned something about peas, I now have many questions which I wish answered—

What is the best variety for each different class of soil? That you see is a multitude of questions in one.

How many pounds should one sow per acre of each variety on the different kinds of soil? There are many more questions.

From experiments I have tried this year I incline to the following rules:

1. On rich, strong, moist soils, short vined peas do best, as long

vined peas sometimes get to be 18 feet long; rot off at ground and yield little.

2. On sandy, dry, poor soils long vined varieties do best, as short vined varieties are hard to harvest.

3. Sow one and a half to two bushels of small peas (Bangalia, Canadian) up to 3 bushels of larger peas (Kaiser). I have gotten best results with 200 lbs. Blue Bells, three and two-fifths bushels.

4. I have seen sprouts coming from both halves of split peas. Do not know whether this is common or uncommon, nor whether the vine from split pea is as strong as from a whole pea. With potatoes, the richness of the soil is very important, as in a rich soil a sixteenth of an eye, with a very small portion of potatoe attached will make a strong vine, while in a poor soil one should plant a large piece.

### Experiments at Puyallup.

Prof. W. A. Linklater, of the Puyallup Station kindly offered to try some experiments with peas this season, and I have the following report:

I have written Prof. Linklater asking for information as to character of soils and subsoils of plats.

It should also be borne in mind that peas were planted at a uniform rate of 120 lbs. per acre; although there were three different sizes of Blue Bells, a large, medium and small; the largest running about 1,500 per lb; the medium about 1,900 and the small still more, though I did not count sample.

My Bangalia run about 3,800 per pound, more than twice as many as the large Blue Bells. As the Bangalia vine is longer than the Blue Bell, though the leaf is more slender, it seems that the Blue Bells should be sown at the rate of 3 to 3½ bu. per acre. My best yield has been with nearly 3½ bushels, though I have never tried more.

At the Experiment Station two sets of plats were tried, and I give the relative yields:

Blue Bell No. 2, 12½.

Kaiser, 11 8/11.

Blue Bell No. 3, 11.

Bangalia 9½.

Amraoti 7.

Another set of tests, also at Puyallup, resulted as follows:

Bangalia, 9¾.

Amraoti, 9¾.

Blue Bell No. 1, 9½.

Kaiser, 6¾.

Canadian, 6½.

As will be noticed the results vary a great deal; owing possibly to the soil not being uniform; to one sort of pea being better adapted than another to the soil selected; the rate of sowing, or to some other reason.

A thresher told me that he once threshed three and an eighth tons of peas from a measured acre. I know of many yields above two tons per acre. With field selection of seed from heavy yielding vines land with varieties of peas found to be adapted to our several soils there seems no good reason why we cannot "breed up" our peas as much as corn has been bred up. Some years ago my father raised 112 bushels of shelled corn per acre; but the high record is around 220 bushels per acre.

I will be glad to furnish Blue Bell peas to anyone willing to try experiments first, as to comparative yields of different soils, and second as to adaptation of different varieties

## CLOVER SEED

VETCH TIMOTHY  
RYE ETC. OVER 99  
PER CENT PURE

It is advisable to get orders in early as possible, as prices have upward trend.

Don't forget we handle **CONKEY FLY KILLER**, Conkey Lice Powder and all of their Poultry Remedies.

**BARTLETT'S** Calf Meal, the perfect milk substitute.

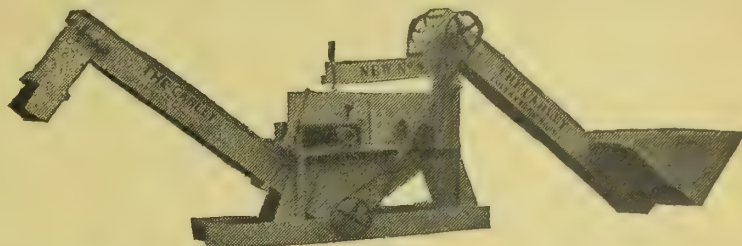
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SEATTLE, WASH.



## The Carley Roller Feed Mill

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Sizes

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Successors to CARLEY BROTHERS

## Shrubs - Plants - Vines - Trees

Having taken over the entire stock of the Richland Nursery, we are prepared to fill orders for all kinds of Flowering Shrubs, Vines, Clarke's Seedling Strawberry Plants, European Grape Vines and Shade Trees in choice grades. Please let us know your needs early and get a copy of our catalog and prices.

### BREITHAUP T NURSERY CO.

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Goods handled strictly on commission. Prompt returns our specialty.  
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Hyacinths, Tulips, Crocuses, Iris, Daffodils, etc., in all the latest and rarest varieties. Out catalog contains valuable information about plants of all kinds and how to grow them. When writing for catalog and to obtain a generous discount on orders for the next 30 days. Please mention this paper.

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### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment  
Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

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Full of helpful suggestions to make your place beautiful,—It's up-to-date, Instructive. Please mention this paper and write to,

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to different soils and third as to proper amount of seed per acre form different varieties.

I would suggest around eight peas to the square foot of land; say seven, eight and nine; or six, eight and ten peas per square foot.

If others who are interested will send me 5 lbs. each of Amraoti, and Kaiser I will be glad to make tests as to both adaptability to various soils and also as to best rate for seeding.

Soils are so spotted that many tests will be necessary to really settle these questions in an authoritative way.

W. H. KAUFMAN,  
Bellingham, Wash.

#### REMEDIES FOR POTASH SHORTAGE

Various suggestions have been made in regard to steps to be taken by farmers in reference to the shortage of Potash in their fertilizers, caused by the greatly reduced shipments of Potash from Germany since the first of August. Most of the fertilizer Companies have endeavored to make the potash on hand go as far as possible by selling for the present brands of complete fertilizers containing only 2 or 3 per cent of potash and withholding from sale brands containing larger amounts.

The suggestion that some or all of the potash be replaced by phosphoric acid is absurd, for every school boy knows that one plant food cannot take the place of another. There are some indirect fertilizers, such as lime, gypsum and salt that can release a limited amount of potash from some soils that contain hydrated silicates of Alumina and potash. But if these soils have already been treated with lime or have received repeated dressings of the usual forms of fertilizer containing soluble phosphate with its accompanying gypsum, then the potash in the hydrated silicates has to a large extent already been replaced and the use of more lime or gypsum or salt could not be expected to release much additional potash. Ground limestone or oyster shells act too slowly to be used as potash releasers.

The residue of soda left in the soil by nitrate of soda is more effective in releasing potash than is gypsum and hence goods, in which the nitrogen is largely in the form of nitrate of soda, may have a special value in the present emergency.

It is often stated that decaying organic matter releases potash from the soil but there seems to be no direct evidence of this. On the contrary, Dr. S. Peacock states in the American Fertilizer of Sept. 5, 1914, "Several thoroughly competent researches have shown that decaying organic matter has little effect on converting inert mineral plant food in the soil into available form."

In any soil the amount of Potash capable of being released by these indirect means is a very small fraction of the total potash in the soil, most of which exists in a form about as soluble as window glass. There is no known profitable method for rendering this inert potash of the soil available fast enough to provide for profitable crops. Whatever temporary expedients we may employ in the present emergency, we must keep in mind that the Potash thus removed from the semi-available soil reserves must later be replaced if we are to maintain the soil's productiveness.

There is danger in the statement that farmers have been using an excess of potash. Crops use on the average about two and one half times as much potash as phosphoric acid, while the average fertilizer sold contains only half as much potash as phosphoric acid; yet no one claims that we are using too much phosphoric acid. The potash remaining from previous fertilization is practically nothing except in the limited areas where a ton or more of fertilizer has been used per acre on truck crops. Very rarely is half as much potash applied to the wheat, oats, corn or cotton crop as the crop removes.

The potash mines are so numerous and the stocks on hand so large that supplies can be promptly sent forward, as soon as European conditions permit freight shipments to be resumed.

H. A. HUSTON.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### TREES ON IRRIGATED LAND.

By I. D. O'Donnell, Supervisor of Irrigation, in Reclamation Record.

While on the train a few days ago I made the acquaintance of an eastern man who was coming West in search of a home. He had in mind settling on a Government irrigation project. We were just then crossing one of the most successful of the Government projects. The well tilled farms made an ideal picture and the abundant crops in healthful growth were a joy to the eye of an irrigation farmer. The home seeker did not appear well pleased with all the prosperity in sight, and in reply to my query as to how he liked the looks of the project he said, "The settlers have not planted many trees."

This homeseeker voiced a thought that has for some time been prominent

in my mind. The settlers have not planted many trees.

Professor F. S. Cooley, of the Montana Agricultural Experiment Station, recently told of an old man who had sold his farm. He had no children and in his declining years the labors of the farm became burdensome. A friend asked him what on the farm he found hardest to leave and he replied, "It costs me a pang to leave the house and barns I have builded and the fences and other works I have made, but I shall miss most the trees I have planted."

Few things make the farm home more attractive than do the trees we have planted.

Everyone who as a child attended country school well remembers the old poem, "Woodman Spare that Tree," and approves of the sentiment therein expressed.

Just recall to mind the farms that have appealed to you as being attractive and home-like and you will find that each had its beautiful trees. The

# it has the "Kick"



## RED CROWN

### the Gasoline of Quality

Not a mixture but  
a straight product  
of refining

## Standard Oil Company (CALIFORNIA)

### Christopher Nursery Co.

Established at present location for 25 years. Nurserymen for four generations is the record.

**APPLE TREES**—All leading varieties 4 to 7 feet stocky trees: Yellow Transparent, Gravenstein, Wealthy, Wagener, King, Olympia, Baldwin, Winesap, Winter Banana, etc.

**PEAR TREES**—A fine stock of Bartlett, Anjou, Bosc, Angoulene, Comice and others; also Dwarfs.

**CHERRY TREES**—A choice lot of Lamberts, Montmorency and other kinds.

**PLUM AND PRUNE TREES**—Strong Italian, French, Sugar Bradshaw. **SMALL FRUITS**—Gooseberry, Currants, Blackberry, Raspberry, Loganberry and other classes. Strong plants.

**ORNAMENTALS**—Roses affording satisfaction, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce and other coniferous, and small evergreens.

Write for prices and complete list and please mention this paper.

**JOHN A. STEWART & SON, Christopher, Wash.**

### Headquarters for OREGON CHAMPION GOOSEBERRY

and Perfection Currant

Attractive prices made now for Advance Orders

Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear.

Correspondence solicited.

### Portland Wholesale Nursery Co.

301-302 Stock Exchange Building.

PORTLAND, OREGON

The Place to Buy your Supplies



ideal farm home you have in mind to make for yourself has its trees. Why not plant them at the first opportunity? Trees grow slowly.

Trees also have a commercial value. Set a small tract of your waste land to trees of good varieties and you will find a ready sale for them among your neighbors and the new-comers in your section. What you do not sell will mature and furnish you with needed material for buildings, fences, and repair work.

From a small plat of less than an acre on my farm I have sold several hundred dollars worth of young trees and I have left enough to make a fine grove.

On some of the Government projects the settlers have found it necessary to set out rows of locust trees to protect the crops from blowing sand and from the hot, dry winds. The settlers on these projects have, of necessity, beautified their farms, protected their crops, and made investments that will prove as profitable as any crop they could grow.

It is understood, of course, that different projects will, on account of varying climatic conditions, require different varieties of trees. As a general rule it is well to set out varieties that combine satisfaction as shade trees with utility when made into lumber or fencing material. Your state agricultural experiment station can be relied upon to give you the names of the proper trees to plant.

To make your home attractive; to provide wind breaks for the house, barn and grounds; to provide wood for future use, plant trees of good varieties. You will be well repaid.

#### Proportion of Plant Adaptability,

As a general principle, it may be stated that the best agricultural conditions exist when from 10 to 25 per cent. of the land is in forest. While there is no probability that so large a proportion of land will ever be devoted to tree growth on the land on the reclamation projects, there is real need for a certain amount of forest growth upon each ranch. By a careful selection of species, the choice of suitable sites and proper management of plantations, enough forest can be grown to exercise a marked effect upon farm and ranch development and to supply wood for many purposes.

Trees of any species adapted to local conditions of soil and climate can be grown under irrigation. Likewise land which has water within 15 to 20 feet of the surface, without intervening rock strata, is suitable for tree growth. Where the level of the ground water is much lower and conditions are more arid, greater care is required to insure success.

Probably the greatest need for planting in a treeless region is for protection purposes:—to shelter an orchard or a resident site; to prevent hot winds from scorching the field crops, and to conserve soil moisture within the protected area, as well as for the protection of stock in open pastures. Although a windbreak may incidentally furnish useful material, its arrangement should be chiefly with the view of securing the most effective protection along the sides of fields and buildings.

In some cases the farmer will find it profitable to devote a few acres of good land to trees. It is true that some time must elapse before the plantation will become productive, but by the choice of rapid-growing species

and by close spacing the thinnings which will be necessary in a few years will provide material suitable for fuel, stakes, and the like.

Aside from planting for protection and wood supply, planting may be advisable along the canals and ditches to reduce evaporation and to hold the banks, as well as along the roads and streets.

### CO-OPERATIVE ACTIVITIES FOR IRRIGATORS.

The passage of the Reclamation Extension Bill marks the first forward step in the new movement for the prosperity and progress of settlers on Reclamation projects.

Secretary Lane in his New Years Greeting said to you: "We shall endeavor to give you full opportunity to make good." This promise is now realized. The opportunity is before you. It is for you to make good.

You can not make good merely through the acceptance of this extension of time for payment. You have much else to do, before your success is assured.

The conditions which made the ten-year repayment plan so burdensome are still upon you. Your future and the future of the Reclamation Service depend upon the wisdom with which you make use of the credit which the Congress has extended to you.

Every resource within your reach must be utilized and developed to its fullest, if you are to have that great measure of success we all expect to see realized.

One of the most effective and necessary resources of the rural community is the organization for cooperative effort. Its greatest strength lies in the perfection of mutual enterprises.

You have greater incentive to combine for mutual advantage than residents of any other rural community.

There is probably no number of farmers in the United States so closely united by common interest as you are.

The apparent intent of the Reclamation law is to make you the co-owners and co-operators of the irrigation works which supply you with water.

Inasmuch as upon the proper operation of such works the prosperity and success of each individual depends, as well as the success and prosperity of the entire community, you are bound together by the strongest possible ties.

Yet, except through the activities of your water users associations, there have been comparatively few attempts at cooperative effort on reclamation projects.

It would appear to the writer to be well within the legitimate range of duty of project managers to endeavor to stimulate interest along these lines and the purpose of this article is to suggest the inauguration of a general movement on each of the projects for the organization of cooperative associations for either one or all of the following purposes:

Insurance of crops from damage by hail, flood or fire.

Borrowing and loaning money for productive purposes.

Developing, grading, packing and marketing crops.

Creameries, cheese factories, mills, elevators, warehouses, or other enterprises or utilizing, manufacturing and marketing the farm's products.

Telephone, electric light and power plants.

## THE DRAIN TILE QUESTION SETTLED

Note these prices on carload lots of first quality burned Clay Drain Tile:

|              | Weight per ft. | Per Thousand ft. |
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| 3-inch ..... | 5½ lbs.        | \$15.00          |
| 4-inch ..... | 7½ lbs.        | 20.00            |
| 6-inch ..... | 13½ lbs.       | 33.00            |

F. O. B. cars Seattle. Minimum carload 30,000 lbs.

If you cannot use an entire carload, unite with your neighbors and make up the required weight.

Write for pamphlet, "Hints on Farm Drainage." Free for the asking.

### DENNY-RENTON CLAY & COAL CO.

Department D

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**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nellis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

**A. HOLADAY SCAPPOOSE, OREGON**

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation  
**923-5 Railroad Ave. CHAS. UHLEN SPOKANE, WASH.**

## Milton Nursery Co.

**Pear, Cherry, Apple, Prune and Peach**  
**Full Line Shade and Ornamental Stock**

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

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Salesmen wanted.

A Catalog and Special Prices on Request.

## Samson Stump Puller



One Man's Hand Clears Your Land with the SAMSON. It's a Real Hand-Power Machine that can be operated and easily moved around by ONE MAN. Holds 100 feet of cable on the drum; moves a stump 100 feet without changing the rigging; has two speeds. Mr. Varney, of Poulsbo, Wash., says "The SAMSON pulled 30-inch second growth fir stumps out of hard clay soil on high ground." Mr. Calkins says, "The stumps I pulled with the SAMSON averaged 3 feet." Let the SAMSON pull your stumps. Hand and horse Stump Pullers from \$30 up. Write now for our Booklet No. 2. It's free.  
**SAMSON STUMP PULLER COMPANY**  
1112 Western Avenue Seattle, Washington



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WENNERSON

## WHAT DID YOU DO?

Did you give him a lift? He's a brother of man  
And bearing about all the burden he can.

Did you give him a smile? He was downcast and blue,  
And the smile would have helped him to battle it through.

Did you give him your hand? He was slipping down hill,  
And the world, so he fancied, was using him ill.

Did you give him a word? Did you show him the road?

Or did you just let him go on with his load?

Did you help him along? He's a sinner like you,  
But the grasp of your hand might have carried him through.

Did you bid him good cheer? Just a word and a smile

Were what he most needed that last weary mile.

Do you know what he bore in that burden of cares

That is every man's load and that sympathy shares?

Did you try to find out what he needed from you,

Or did you just leave him to battle it through?

Do you know what it means to be losing the fight

When a lift just in time might set everything right?

Do you know what it means—just the clasp of a hand

When a man's borne about all that a man ought to stand?

Did you ask what it was—why the quivering lip,

And the glistening tears down the pale cheek that slip?

Were you a brother of his, when the time came to be?

Did you offer to help him—or didn't you see?

Don't you know it's the part of a brother of man

To find what the grief is and help what you can?

Did you stop when he asked you to give him a lift,

Or were you so busy you left him to shift?

Oh, I know what you meant—what you say may be true—

But the test of your manhood is, What did you do?

Did you reach out a hand? Did you find him the road?

Or did you just let him go by with his load? —Exchange.

## GOLDEN RULE IN PRACTICE

"She knew how to forget disagreeable things; she kept her nerves well in hand, and inflicted them on no one. She mastered the art of saying pleasant things. She did not expect too much from her friends. She made whatever work came to her congenial. She retained her illusions and did not believe all the world wicked and unkind. She relieved the miserable and sympathized with the sorrowful. She never forgot that kind words and gentle smile cost nothing, but are priceless treasures to the discouraged. She did unto others as she would be done by, and now that old age has come to her, and there is a halo of white hair about her head, she is beloved and considered. This is the secret of a long life and a happy one.

## TO DISPERSE WRINKLES

When a woman has wrinkles on her face every one says "She is old;" but such is not always the case, for these objectionable lines may arise from various causes. Loss of flesh will make the skin loose, and with this diminution of the fat which fills up the cracks and lines, the skin will naturally lose its smooth appearance and fall into wrinkles. The great thing, therefore, is to counteract this tendency to lines by applying to the skin some emollient lotion of a non-drying nature, combined with an astringent wash to tighten the skin. A good cream or pure olive oil will do this if rubbed into the skin circular fashion, if the lines spread from the eyes to the hair. If underneath the eye gently smooth them out by rubbing, not upwards, but beginning from the inner corner downwards with semi-circular movement, working the oil or cream in with the first and second fingers. Lines from the nose to the chin should be rubbed towards the cheek, and those across the forehead from side to side of the face, not up and down. These rules for the dispersion of wrinkles hold good no matter from what cause they come, and it is also an excellent plan to massage the face all over with a little fresh cream, while the natural oil in the fingers will do much to prevent and drive them away if this friction is employed regularly five minutes every night. Before rubbing, bathe the face in warm water not too hot, then with soft cold water, into which a few drops of toilet vinegar been added, give the countenance a last laving.—Health.

## JUST A THOUGHT

Be not satisfied with the ordinary; you can have the best there is.

Learn to be still. Let your life be an endless symphony of heavenly music.

There are few things more desirable than harmony.

"In all your ways acknowledge Him, lean not to your own understanding."

It is well to live serenely and with calm faith.

The most successful church is one in which the people preach.

The mind that meets everything in joy, conquers every time.

## FUTURE DAY OF GOVERNMENT

"The day will come when the only battle-field will be the market open to commerce and the mind open to new ideas. A day will come when a cannon will be exhibited in public museums, just as an instrument of torture is now, and people will be astounded how such a thing could have been. A day will come when these two immense groups, the United States of America and the United States of Europe, shall be seen placed in presence of each other, extending the hand of fellowship across ocean."—Victor Hugo.

## Real Home Comfort

The cheery warmth of a

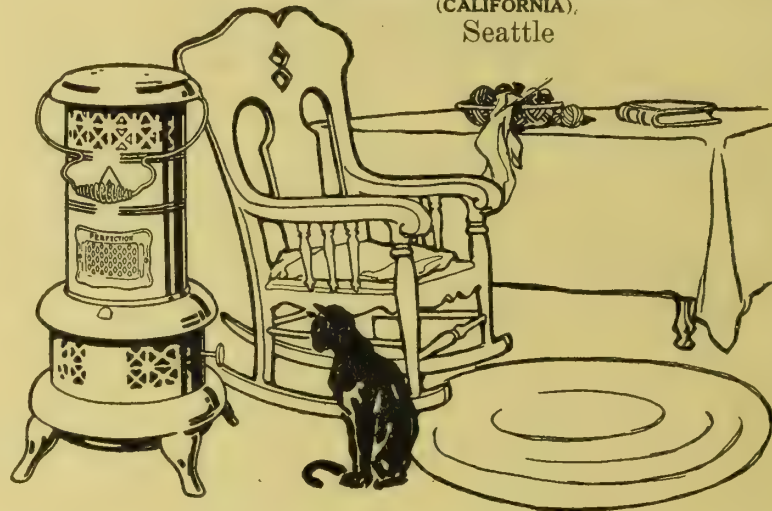
## PERFECTION OIL HEATER

keeps the entire household cozy and comfortable. Burns nine hours without refilling. Easily cared for.

Dealers everywhere.

Write for booklet, "Warmth in Cold Corners."

Standard Oil Company  
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**Billy Buster**

SCHOOL SHOES

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WATER-PROOF WEAR-PROOF

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THEY ARE MADE IN SEATTLE FROM BEST LEATHER TO SUIT THE NEEDS OF HUSKY BOYS—

JUST SAY "BILLY BUSTER" TO YOUR SHOE MAN.

IF HE CAN'T SUPPLY YOU, WRITE US AND WE WILL ADVISE YOU WHO CAN

The Washington Shoe Mfg. Co. Seattle, U.S.A.



We have plenty of gloves. No advance in price.

Sent prepaid anywhere in Northwest. Send for price list.

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K Street Tacoma, Wash.

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One Pound 25 Cents All Dealers

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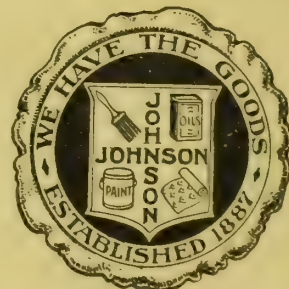
HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

Northwest Grocery Co.  
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Oldest and Largest Mail Order House in the State.

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Sunshine Lamp 300 Candle Power FREE

To Try In Your Own Home

Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

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We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.

SUNSHINE SAFETY LAMP CO.  
214 Factory Bldg. Kansas City, Mo.



Every word we say should carry with it hope, encouragement, sunshine.

To have love we must give love. There is no impossible thing, except as we believe it.

The life that trusts to the uttermost will be taken care of.

"The heart that trusts forever sings."

"I will never leave thee, not forsake thee."

Our health does not consist of money—it is composed of what you are.

"Count that day lost whose low descending sun, views from thy hand no noble action done."

Good will is an important fact in life; with it you can do, and win almost anything.

I would rather be kissed by an enemy than wounded by a friend who enjoyed the job.

—P. E. O. Record.

#### BEAUTIFUL DAHLIA EXHIBITS

At nearly all the fairs in Western Washington held this season were beautiful exhibits of Dahlias. Especially were these flowers at Western Washington Fair, Puyallup, attractive and profuse there being 250 varieties.

The exhibitor who has the largest collection is Mrs. George Sheffield, of Burton, Vashon Island, one of the largest and most successful growers in the state. Mrs. Sheffield's dahlias were not entered in competition, but made such an excellent showing that they were awarded a special blue ribbon by the management. Among the varieties shown by Mrs. Sheffield is a specimen bloom of the magnificent variety originated by her and named for one of Tacoma's most popular pioneer merchants, Henry A. Rhodes. Next year Mrs. Sheffield expects to introduce at least 60 promising and marketable varieties of the Queen of Autumn.

Others who have dahlia exhibits of merit are Howard Evarts Weed, the landscape expert of Beaverton, Oregon; Joseph Mitchell of the Mitchell nurseries at Larchmont, and Perry Summerfield, superintendent of the Pierce county poor farm. Neither of these were entered in competition but all contained many fine specimens.

Among the leading growers of Washington are Otto F. Wingren, of La Conner, who has 350 varieties catalogued and his garden is becoming famous for beauty during several months of the fall.

#### KITCHEN RECIPES

**Solid Chocolate Cake**—Two eggs, 2 cups sugar, 2 cups flour and  $\frac{1}{2}$  cup butter. Beat butter and sugar to a cream. Mix  $\frac{1}{2}$  cup milk, 1 cup grated chocolate, 2 teaspoonfuls vanilla. Bake slowly. This cake takes longer to bake than ordinarily.

**Escalloped Cabbage With Tomato**—Cut cabbage into quarters, cut away hard mid rib and wash thoroughly. Place a few pieces at a time so as not to reduce the temperature, into a large kettle of rapidly boiling salted water. Allow to boil rapidly and uncovered until tender, frequently pushing cabbage under water. Drain and season. Place alternate layers of cooled cabbage in a baking dish, cover with buttered crumbs and bake until crumbs are brown.

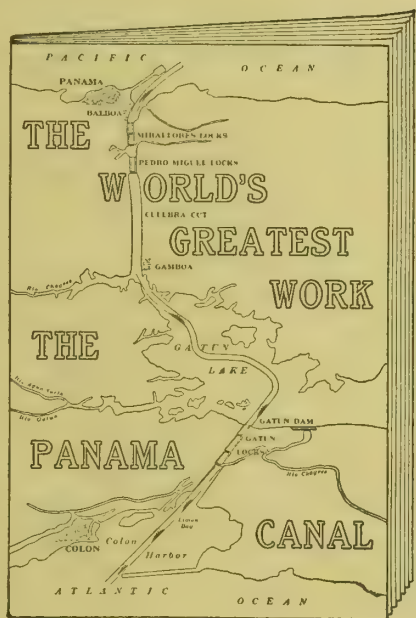
**Banana Blanc Mange**—To one quart

of boiling milk add one-half cupful of sugar, a pinch of salt and three tablespoonfuls of corn starch dissolved in one-half cupful of cold water. When it thickens stir in the pulp of three large bananas and the stiff beaten white of an egg. Set away to cool in mold. Serve with thin custard sauce.



#### FARRAR'S LIFE OF CHRIST.

A book which should be in every home, is sent postpaid including one year's subscription to this paper for \$1.25. Northwest Horticulturist & Dairyman, Box 1604, Tacoma, Wash.



We send this portfolio in colors containing up-to-date world map, with two years' subscription paid in advance for \$1. Northwest Horticulturist & Dairyman, Box 1604, Tacoma, Wash.

#### Nursery Stock

##### FRUIT TREES

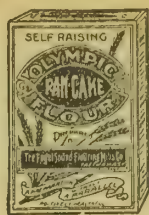
##### SMALL FRUITS

##### ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

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F. J. Rupert, Mgr.  
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#### Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

#### Hardware for Farmers' Buildings

When building your barn, house or other structures it is your privilege to get the lowest cash figure and the highest specific quality. The natural question is WHERE? The answer MOHR HAS IT.

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#### COPPER ORE PAINT

For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

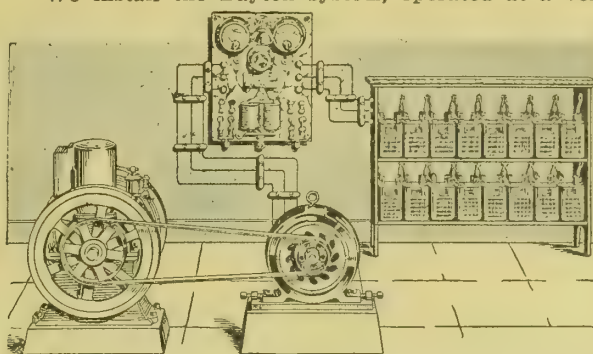
Write for prices on quantities.

MASHELL PAINT CO., Tacoma, Wash.

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We install the Dayton system, operated at a very reasonable cost.



This Individual Plant Gives You the Same Light Service as in the City.

With a small engine to be used also for other power purposes, the cost of charging the batteries is very little and in some cases practically nothing.

The lighting plant, illustrated, consists of a Dynamo, Engine, a Switchboard and a Storage Battery. The dynamo charges the battery, the battery acts as a reservoir, which supplies current to the lights when and where desired.

This independent light plant in your cellar, barn or pump house give you bright, clean, glowing electric light, wherever you can possibly use it, in your home, yard, cellar, driveways, barn and other buildings, always instantly at your service by merely touching the button.

EASIEST LIGHT ON THE EYES. CONVENIENT. OUT OF DANGER OF FIRE. PURE AIR.

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Put up your surplus fruits and vegetables in your own home. Buy one of our home canning outfits, complete and ready for business. Small outlay, very little expense to operate; good profits. We also furnish cans, solder, labels and all other cannery equipment.

Canners Supply Co.

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#### PEONIES

The popular and satisfactory flowering plant for the Northwest.

Our strong plants set in September or October will bloom next spring.

For complete information, send for a copy of our special peony catalog, free.

BEAVERTON NURSERY

Beaverton, Oregon.

H. E. Weed, Prop.

#### VETCH SEED

CLOVERS, ORCHARD AND RYE GRASS

Early application is advisable to be sure of present minimum prices of grass seeds. More fall sowing will be done in the Coast Section than ever before. If you need feed cutters or anything else in the implement line, remember, "Positive Satisfaction" is our motto.

Poole's Seed & Implement Co.

1507-9 Pacific Ave.

TACOMA, WASH.



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### CLEAN MILK PRODUCTION.

From the Profit Margin Stand Point.

Persons engaged in the production of milk and consumers interested in procuring clean, safe milk, will be interested in the factors for producing the same, as outlined by the United States Department of Agriculture in a recent Farmers' Bulletin (No. 602), entitled "Production of Clean Milk." The essential factors are outlined as follows:

Clean, healthy cow kept in clean, light, well ventilated stables.

Stable so constructed as to be easily cleaned.

A clean, well-drained barnyard.

Clean utensils, thoroughly sterilized.

Clean, healthy milkers that milk with dry hands.

Clean small-top milking pail.

Immediate cooling of the milk to 50 degrees F. or lower.

Storage of milk at a low temperature until delivered.

A separate house for handling the milk.

An abundant supply of pure water.

The new bulletin in its 18 pages contains a number of figures and describes in detail, the practical methods that should be followed in the production of clean milk.

#### How Milk Becomes Diseased.

Bacteria, according to the bulletin, find their way into the milk from various sources. Some may come from the udder itself, where they grow in the milk cisterns and ducts. The greater number, however, come from the dust of the air, the dirt from the udder and flanks, from the milker, and from unclean utensils. Disease-producing bacteria may get into the milk from cows having such diseases as tuberculosis, or from people who handle the milk, who may themselves have contagious diseases or who have been taking care of patients afflicted with such diseases as typhoid fever, diphtheria, and septic sore throat.

#### Importance of Clean Milk.

Cleanliness is not an absolute safeguard against disease, but it is the greatest factor in preventing contamination. From the health standpoint there is great danger not only from the specific disease-producing bacteria previously mentioned, but from milk that contains large numbers of miscellaneous bacteria which may cause serious digestive troubles, especially in infants and invalids whose diet consists chiefly of milk. There is also the minor consideration of the loss to the consumer from milk souring or otherwise spoiling before it can be used. The cleaner the milk, the longer it will keep good and sweet.

Clean milk not only benefits the consumer, but the milk producer who will consider this subject from an unbiased standpoint will find many ways in which he himself is benefited by producing clean milk. There are number of items in his connection

which, when considered alone may seem unimportant, yet collectively they are of great importance. Moreover, they are not only of immediate value, but have a cumulative value reaching far into the future. Tuberculin testing, for example, is not only a safeguard to the purity of the milk supply for the consumer, but is a means of assisting the producer to protect his herd against future ravages of tuberculosis.

Most producers of market milk have experienced the chagrin of having a shipment of milk refused or returned because it reached the market sour, tainted, or otherwise in poor condition. Although such milk may be used for feeding pigs it usually means a complete loss to the producer, as it costs too much to transport it back to the farm and because, depending on the market as an outlet for his milk, he has no means for utilizing small amounts at uncertain intervals. Another important consideration is the unpleasant effect upon the purchaser. Delivering sour or tainted milk usually results in losing the confidence of the dealer; or if it is delivered direct to the consumer, it means the loss of good customers. A reputation for clean milk means fewer complaints, a better class of patrons, and a steady market for the product of the dairy.

Safeguarding the purity of the milk is a protection to health on the farm in several ways; first, the health of the farmer's family, who use a portion of the milk themselves; second, the health of the calves, which live largely on milk. Healthy cows to breed from and pure milk to feed upon are two important factors in rearing thrifty calves and in the development and maintenance of a healthy and profitable herd. Aside from these immediate and definite benefits there is another consideration, not immediately measurable but of vast influence, namely, the moral influence, for no one can learn to produce good clean milk without learning good methods of care and management of the herd, and the study of these things leads to greater care and intelligence in the economic features of the business.

### SHORTHORNS IN DUAL CLASS.

A Shorthorn that is not naturally thick-fleshed and does not by right of inheritance possess the natural ability to put that flesh on rapidly and economically when relieved of the task of turning the feed into milk, can not legitimately be called a dual-purpose animal, says A. V. Abingdon, in Live Stock Journal. No matter how such an animal may be bred, even though its sire possess the blood of all the Dukes and its dam of all the Duchesses, if its only real value is to produce milk in a pail, then it must be classed as a dairy animal and we don't need to be making or remaking any old or new breed for any such purpose. Our special dairy breeds

## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

**J. D. ROSS & SON**

**Kent, Wash.**

### HOLSTEIN HEIFERS---Choice High Grade Stock

We are offering to sell 30 young Holstein cows, fall freshening; also a choice bunch of Holstein heifers out of registered bulls with dams on both sides great producers, bred to registered sires, will freshen in early spring. If you want something of this kind, tubercular tested, write for particulars at once and mention this paper.

**F. F. FOLSOM,**  
204 4th Ave., Kent, Wash.

### Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

**E. H. THOMPSON, Mt. Vernon, Wash.**

### Holsteins For Sale--A. R. O. Breeding

We offer 12 females of the very best and most promising heifers raised here, five coming fresh this late fall and winter; also a young bull ready for service. All out of A. R. O. dams.

**J. H. DE HOOGH & SON**  
Twin Brook Stock Farm

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## A. J. C. C. JERSEYS

#### Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**  
Grandview, Wash. (Yakima County)

### Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow.

**E. R. BRADY**  
Satsop, Wash.

### HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

**J. W. Hollinshead, LADNERS, B. C.**



are far better than we can ever hope to manufacture out of the Shorthorn even if such a course should by any antic of fortune's wheel seem desirable

A few of our enthusiasts, too, claim too much. What is the sense in insisting that a breed can be maintained equaling the Angus as a beef-maker and the Ayrshire or Holstein as a pail-filler? It is true that history records an instance of a Shorthorn giving 12,000 lbs. of milk in less than eleven months and producing a steer that became a grand champion at important fat stock shows. There have been a few bulls, like Beau Sabreur for instance, that begot both great milk-producing and flesh-producing propensities, but how many of them can be counted? To claim that such instances are common, or could be made common, is all rot—a waste of time. Any one who talks that way doesn't know his book.

Just the moment you begin to open up the frame to permit of a physical ability to make great quantities of milk, just at that very moment you destroy the possibility of composing a true beef conformation. To seek either extreme or to hold a middle course is the privilege of each and every breeder, but it is nonsense trying to evolve a breed that shall be the glass of fashion and the mould of form so far as beef is concerned and the equal of the specialized dairy breeds at the pail. It is amazing that so many extremists should have sprung up among us.

It seems to me that the average production of the Kelmscott herd of some 200 head of Shorthorn cows in England was around 7,000 lbs. of milk per annum, yet the cows that made that average gave birth to several winners of prominent prizes in the show ring when judged for beef alone. If our enthusiasts can not be satisfied with moderation of that description, either in beef or milk, they would better turn their energies in the direction of some other breed.

The dual-purpose Shorthorn is a living, moving, profitable reality, but there is no law or rule to compel any one to prefer that type to the strictly beef sort to which he has hitherto pinned his faith. The whole subject is a larger one than many people seem to think it and those are the folks who are getting in wrong and misleading others. Furthermore this problem is one on which no man's word or opinion need be taken. All the data available can easily be reached. Those who wish to trace their path in the middle of the road can follow the trail blazed by others whose every step is plainly recorded if not actually visible. Why plunge blindly after the dual-purpose sort without first investigating thoroughly?

The question of importance to the farmer who is an intending purchaser of cows is to determine whether or not 7000 pounds milk, together with some beef produced from a certain amount of feed is worth more than a larger amount of milk produced from the same quantity of feed with a less value of beef. In general it may be said that where fat producing feed is abundant at low price, dual cows have a chance, but where feed rich in protein are most abundant at low cost and the milk and butter market is good, there the special dairy breeds are in the lead.

## SECOND ANNUAL SALE OF PURE BRED HOLSTEINS

### Continuation, Yearly Event Planned.

The writer has always held that the sale ring was the right way to dispose of surplus cattle. When I got more on hand than I could handle last year and not being able to make my brother breeders see that we could afford to have an auction, I advertised and sold my entire herd, stating at the time that with the proceeds I would pay my debts and buy more cattle with all the money I had left. I did all this and there were two men in the State of Oregon to whom I had sold their start, one of which on account of rheumatism and one because he had not feed enough to feed what he had wished to sell their herds and I knowing what they were bought these too.

Again I have a surplus, over 100 head and my neighbor breeders having a surplus we have decided to hold the 2nd annual sale. We are planning one for November each year regardless of the price they bring.

In this sale are about 30 head of young cows and heifers from the herd of E. B. Marks, whom your readers all know. They are all good ones for which we have no excuse to offer. They are bred to the grand bull "Mutual Fobes Longfield DeKol," the Senior grand champion of the Washington State Fair, 1913, 1914. He is owned jointly by Mr. Marks and myself, has 6 sisters that average over 33 lbs. buter for 7 days.

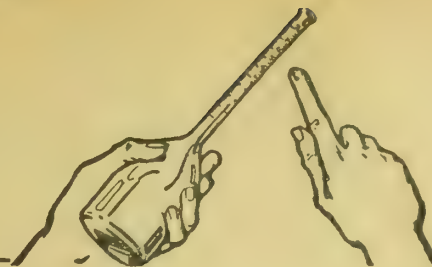
His get are all show animals as shown by the reports of the Washington and Oregon State Fairs. There are a number of his daughters in the consignment of Mr. Marks to the sale.

Mr. Wm. Todd and Sons have consigned a few daughters of their bull "Sir Johana Ruth Fayne" and he stands today without a peer as a sire of producing heifers. In fact after an exhaustive study and comparison of the records of the daughters of all bulls and then compare them with the records of the daughters of this bull we find that he stands at the head. In the offering from this herd are some bulls from cows and heifers making 21 lbs. as 2 year olds to 27 lbs. as cows.

From my own herd are about 40 head of young cows and bred heifers that are certainly good to look at, and while few of them have official records they certainly will make good ones when given the chance.

They carry as good blood as in America and are some I bought to keep but I have too many. They are bred to the grand and tried bull "Annie-DeKol Lakeside Model" whose poorest daughter at 3 years 1 month old made 17½ lbs. in 7 days. He has a lot of 21 to 24 lb. punior 3 year. 15 to 18 lb. 1 year old and 2 year old daughters. His dam made for 4 consecutive weeks over 31 lbs. and his full sister made nearly 31 lbs. and both cows came back and did just a little better at another time; thus proving they were real workers. I am informed by Mr. Powell, of Syracuse, the founder of the "MODEL" family, and of which this bull is a close-in member that the tested females of the Model family have the largest average records of the females of any family. In showing records they are unequalled. The dam of this bull, this year in her 11th year carried off the honors in the State of N. Y.

This bull has never been lower



## Get All the Butter Fat

To operate at **full efficiency** and deliver **all** the cream, your separator must be lubricated with an oil exactly suited to its construction. Many oils form "gum", thereby clogging the delicate mechanism of the separator, and thus causing irregular spinning of the bowl, reduction of speed and consequent loss of cream.

# Standard Hand Separator Oil

is made especially for cream separators by oil experts of 40 years experience who have studied the detail construction of the separator—this in order to produce an oil exactly adapted to the purpose. Your separator will do better work, last longer and need fewer repairs if lubricated with Standard Hand Separator Oil. **No matter what you pay, you cannot buy a better oil for the purpose.** Dealers everywhere.

**Standard Oil Company**  
(CALIFORNIA)



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## Mortgage Lifters

Have You a Mortgage on Your Farm?

IF SO OR NOT

BUY HIGH CLASS GRADE HOLSTEIN DAIRY COWS FROM THE

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THE COWS WILL DO THE REST.

IF YOU CANNOT BUY COWS, BUY HOLSTEIN CALVES. WE HAVE BOTH FOR SALE, AND GOOD ONES. COME AND SEE US. IF YOU CANNOT COME, WRITE US.

We have some Fresh Cows ready for immediate delivery

**Spokane Grain Company**

Phone Sidney 444

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SEATTLE, WASH.

JERSEY OR GUERNSEY FAMILY COWS

## Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
DURC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.



and his get were undefeated this year at the Washington State Fair.

All we ask is for those wishing to purchase pure bred cattle to come and look them over and we will cheerfully abide by your verdict for while there are not a large percent of officially tested animals we know that when they freshen they will make large records and that the calves they are carrying will be worth more than they will cost. Every animal over 6 months of age will be tuberculin tested and every animal guaranteed a breeder.

H. C. DAVIS,  
Granger, Wash.

## DAIRYING IN WHATCOM COUNTY.

### Excellent Exhibits at Lynden Fair.

That dairying has made phenomenal strides in Whatcom County, Washington, the past seven years, is evidenced by the successful operation of creameries and the complete exhibit of dairy cattle at the Lynden Fair.

Only a small county fair, yet the grade of butter on exhibit showed that the dairymen of this locality are making the high scoring butter of most uniform quality, the very best to be had on the market.

Cooperation in the work of this industry is here a demonstrated success.

The Lynden creamery transacted a business for the year ending September 1st, 1914, of \$284,187. It is making so strong a feature of quality and quantity that buyers are offering top market prices. There is no doubt but that Lynden is becoming famous for its butter. There are several small creameries whose product is in the same class as to quality.

Another evidence is the number of pure bred herds in each of the leading dairy breeds, Guernseys, Jerseys, Ayrshires and Holsteins were all represented at the Lynden fair, some of these classes by four and five exhibitions and all from Whatcom County.

As to health and vigor there is ample proof and demonstration. Mr. N. P. Sorenson, of Laurel showed a registered Holstein cow with triplets, eligible to registry, and each of the three as fine a specimen of Holstein type and size for age as if it was alone for motherly attention. On the second day of the fair Mr. Nels Jacobson was seen with broad smiles and on investigation, the reason seemed to be that more Guernseys had appeared in his exhibit than was entered. One of his cows had given birth to a calf with fine markings, sired by Manful of Prospect 22841, which is out of the Imported Galaxey Lavinious, and purchased from Ex-Governor Hoard, of Wisconsin.

### Some Pure Bred Herds

Among exhibitions were: B. C. Crabtree Lynden, showing 12 Jerseys. He has a herd of 40 purebreds, Ement Bess breeding. Two beautiful Jersey heifers were recently shipped to a school in China.

Mr. Crabtree was awarded Champion cow, second on sire, first and second on yearling bulls, first and second on heifers.

Geo. Dowling, Custer, Wash., won first on sire and first on bull calves.

Geo. Handy, Lynden, first and second on 6 to 12 months bulls.

The Windcrest Farm Blaine has a fine herd of Jerseys of American breeding, excellent producers.

On Guernseys, Jackman Bros., Lynden, won first on age bull, G. Van de Griend, second.

Nels Jacobson won first and second on age cows, G. Van de Griend second yearling bull, H. B. Douglas, Ferndale, first, P. S. Hillier, Bellingham, second.

Jacob Sweegman, Lynden, has a fine purebred herd of Guernseys.

The sire Faithful Boy, was purchased last year from Mr. B. S. Tryar, Sumner.

Among Holstein Exhibitors are: A. Benson, Lynden, who has a herd of 15 with sire, a grandson of Aggie Cornucopia Pauline.

D. F. Smith, proprietor of Lone Spruce Farm, Everson, Wash., has a herd of 24 purebred Holsteins. His cow Quidee Jewel 2nd produces 75 to 80 pounds milk per day. His sire is Karel Chimacum DeKol, out of Imp Karel Bos.

N. P. Sorenson, Laurel, has some very choice purebred Holsteins, great producers brought from Minnesota, one cow giving 8½ gallons milk per day. His exhibit of triplet calves was a great attraction.

E. J. Sinnes, Goshen, showed a good sire of DeKol breeding, and has profitable milk herd.

A. Minor, Lynden, showed a sire of good dairy type, and has a good Holstein herd.

J. H. DeHoogh & Son had a fine showing of Holstein cows all great producers. His entire herd is in the A. R. O. class which is a most excellent record and attractive for prospective buyers of young stock.

The A. E. Smith Company, of Sumas, Wash., was represented by 8 head including A. R. O. cows which won their share of awards. J. J. Stark, manager, stated there are 20 A. R. O. cows in their herd of 87 deep milkers being Pontiac, Hengerveld, and DeKol breeding.

### Ayrshires.

The Bellingham Bay Improvement Co. showed six fine Ayrshires from their herd at Hampton. A Kelley, manager, states the herd is doing admirably. Among the good producers is the cow Princess Madge, giving 50 pounds milk per day, with a test above 4 per cent. This exhibit won a full share of the prizes.

Wm. Lauckhart, Lynden, also showed a good bunch of Ayrshires. His herd sire is Robin Hood 12th, bought from Mr. J. H. Clise, and the young cows are all making good in milk and butter production. A full proportion of prizes were awarded this herd.

The progress made by dairymen of Whatcom County during the past seven years as revealed by the showing at this fair, is most remarkable.

The fruit and the manual training exhibits of the schools were of excellent quality and style, and the fair as a whole a decided success.

### BUTTER HIGH QUALITY

#### At Washington State Fair.

That both dairymen and creameries in the northwest are constantly improving is evidenced by the butter exhibit at the Washington State Fair as well as exhibits at other local fairs.

J. E. Frevert, who scored the State Fair exhibit said that the butter shown was of the highest grade he had seen this year?

The awards were as follows:

Creamery Butter—1st, Winlock Co-operative Creamery Co., Winlock, Wash., 95; 2nd, G. B. Bales, Ellens-

## LARROWE'S MOLASSES-DRIED BEET PULP

CLEAN — HEALTHFUL  
KEEPS INDEFINITELY

**L**ARROWE'S MOLASSES-DRIED BEET PULP is simply the plain beet pulp with beet molasses dried, but on account of its sweetness it is being preferred by many dairymen and feeders—especially those who use it for fattening. It has all the feeding value of the plain, but with the addition of molasses. Horses grow sleek, stock fatten rapidly, hens lay more eggs—when fed Larrowe's Molasses-Dried Beet Pulp.

You certainly can well afford to give this popular feed a trial. Your feed dealer will supply it to you in 100-lb. sacks—and one sack will prove to you its worth.

LARROWE'S DRIED BEET PULP  
Just Like Roots  
Makes More Milk

THE IDEAL FEED FOR DAIRY COWS

Larrowe's Dried Beet Pulp improves the health and increases the flow of milk. It furnishes more succulence than silage, greater digestibility, an abundance of carbo hydrates—and is just what is needed with alfalfa to make a perfectly balanced ration.

### ORDER FROM YOUR DEALER

Tell him you want "Larrowe's"—the kind that is always uniform, never blackened or burned. If your dealer hasn't it—tell him to write to us.

### Valuable Book—"PROFITABLE FEEDING"—Free

Send for a copy of our booklet "Profitable Feeding," giving valuable information, also instructions for the use of Dried Beet Pulp. Your name and address on a postal will bring you a copy free.

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## The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm.  
Write for prices on trial-lot shipments.

### THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.

### HOLSTEIN BULL FOR SALE

Chimacum Aaggie Cornucopia No. 64100, H. F. H. B., bred by M. S. Nye, Preble, New York. Calved August 15th, 1909. His grandam Aaggie Cornucopia Pauline is a 34-lb. cow. Sired by Aaggie Cornucopia Johanna Lad Junior No. 36, 974 H. F. H. B. Dam Onda Dorothy Concordia Paul No. 67853 H. F. H. B. A splendid animal, his youngsters are making excellent records.

A few choice cows for sale. Write for prices or call.

F. I. MEAD

524 California Bldg.

Tacoma

### PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengerveld," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.

### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

#### Plateau Farm

VASHON, WASH.

B. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

### Registered Jerseys

### BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD

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## Chicona Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

### LINBARGER, RALPH & GUE

#### AUCTIONEERS

Years of experience, thoroughly posted.

Geo. A. Gue, Ridgefield, Wash.

L. H. Linbarger, North Yakima, Wash.

W. H. Ralph, Nez Perce, Idaho.

Write for dates.

A succulent—palatable  
—nutritious—vegetable  
feed—for



—they all eat with relish  
and thrive on Larrowe's  
Molasses-Dried Beet Pulp.



burg, 94; 3rd, I. Benedictson, Spanaway, 94.

Dairy Butter—1st, Mrs. Peden, North Yakima, 94½; 2nd, J. B. Early, Grandview, 91.5; 3rd, Robert A. Smythe, North Yakima.

Ganular Butter—1st, Mrs. Peden, North Yakima, 94.

Ornamental Butter — 1st, Mrs. Peden; 2nd, Miss Alice Gentry.

Unsalted Butter—1st, Mrs. Peden; 2nd, J. B. Bales.

Cheese—1st Menlo Creamery, Menlo, Wash., 91; 2nd, Glendale Creamery, Port Townsend, 90.5; 3rd, Rheinhardt Torske, Custer, Wash.

This scoring in the dairy department was the second of the Creamery Operators & Butter Makers' Association of Washington. The first was held in Seattle and the awards were made as follows: 1st, Laurel Creamery, Bellingham, 96; 2nd, Winlock Co-operative Creamery, Winlock, 94;

3rd, I. Benedictson, Spanaway, 93.

Certified Milk, Cream, Inspectors.

Of the 79 samples of milk brought for inspection and scoring, the result of the judging was as follows:

Certified Class—J. D. Farrel, Seattle, 1st, score 97.25.

Market Milk Class—L. Hansen, Seattle, 1st, 96.75; Eastside Dairy, Kirkland, 2nd, 96; R. J. Elliot, Seattle, 3rd, 95.65.

Market Cream—A. W. Mellon, Seattle, 1st, 93.50; Ellensburg Dairy, 2nd, 93; C. G. Hinkle, Spokane, 3rd, 92.25.

Milk Inspectors' Class—This included all the inspectors of the Pacific Northwest, and the judging was done on the best scoring made on all milk entered. Dr. D. W. Mack, of Portland, received first prize, a gold medal. His score was 88.86. G. S. Henderson, of Everett, was second and Gerald Sheeley of North Yakima, third.

#### RESULT OF MILCH COW TEST AT THE WASHINGTON STATE FAIR AT NORTH YAKIMA.

This test was run for forty-eight hours. Milking at 11:30 and 5:30 consisted of eight milkings.

##### Two Years Old and Under Three.

| Award, Name of Cow and Owner.          | lbs. Milk. | lbs. Fat. | Total Value. |
|----------------------------------------|------------|-----------|--------------|
| (1) Cascade Marie, Wm. Todd & Son      | 140.9      | 4.720     | \$1.768      |
| (2) Cascade Lizzie, Wm. Todd & Son     | 136.       | 4.406     | 1.66         |
| (3) Mottle Bonnie Echo, H. C. Davis    | 117.5      | 3.865     | 1.452        |
| (4) Nottle Abberkerk Rose, E. B. Marks | 107.1      | 2.891     | 1.134        |

##### Three Years Old and Under Four.

|                                  |       |       |       |
|----------------------------------|-------|-------|-------|
| (1) Miss Edna Segis, E. B. Marks | 123.2 | 4.016 | 1.512 |
| (2) Jewel Queen, E. B. Marks     | 117.3 | 3.317 | 1.285 |

##### Four Years Old and Over.

|                                                    |       |       |       |
|----------------------------------------------------|-------|-------|-------|
| (1) Maldeta Canary Mercides, E. B. Marks           | 133.8 | 6.11  | 2.167 |
| (2) Fari Haven Homestead Birkle, Joseph Tyson      | 163.1 | 4.191 | 1.664 |
| (3) Jacobas Choicest Mercides Second, M. W. Nelson | 146.6 | 3.840 | 1.518 |

##### Common Grade, Any Age.

|                                   |      |       |       |
|-----------------------------------|------|-------|-------|
| (1) Boss Brindle, W. M. Lenderman | 83.6 | 4.322 | 1.505 |
|-----------------------------------|------|-------|-------|

## AMONG LIVE STOCK EXHIBITORS.

### Holsteins at Washington Fair.

The Holstein exhibit at the Washington State Fair was one for which all stock breeders of the Northwest may justly feel proud. Mr. Joseph Tyson, who has been attending the Minnesota and Winconsin state fairs for the past ten years stated that in quality the show at the Washington State Fair, surpassed anything ever seen in the two former mentioned states.

While expert local breeders differed from the opinion of the judge in some cases, they all took his decision for awards good naturally as each exhibitor was pleased with his high standard as to type and in measure of actual production.

The following are the awards reported of this breed.

Bulls — Three years or over, 1st, E. B. Marks, North Yakima, Wash.; 2nd, H. C. Davis, Granger, Wash.; 3rd, Grandview Farm, Inc., Grandview, Wash.; 2 years and under, 3, 1st, Joseph Tyson, Moxee City; 2nd, William Bishop, Chimacum, Wash.; 3rd, William Todd & Sons, North Yakima; sr. yr., 1st, William Bishop; junior yearling, 1st, H. C. Davis, 2nd, William Bishop; senior calf, 1st, E. B. Marks; 2nd, Charles Mead, jr., Zillah, Wash.; 3rd, Grandview Farm, Inc.; 4th, Joseph Tyson; 5th, E. B. Marks; junior yearling, 1st, H. C. Davis; 2nd, J. A. Simonson, North Yakima; 3rd, E. B. Marks; 4th, Chas. Mead, Jr., 5th, H. C. Davis.

Cow—Four years or over, 1st, 2nd and 3rd, E. B. Marks; 3 years or over, 1st and 2nd, E. B. Marks; 3rd, W. Todd & Sons, city; 2 years and under 3, 1st, H. C. Davis; 2nd, Jos. Tyson; 3rd, H. B. Marks; senior yearlings, 1st and 2nd, H. B. Marks; 3rd, Wm. Todd & Sons; junior yearlings, 1st and 2nd, H. C. Davis; 3rd, Wm. Bishop; senior calf, 1st and 2nd, W. B. Marks; 3rd, Wm. Bishop; 4th, H. C. Davis; 5th, Wm. Bishop; junior calf, 1st, H. C. Davis; 2nd, Wm. Todd & Sons; 3rd, Jos. Tyson; 4th, H. C. Davis; 5th, Wm. Todd & Sons.

Champions—Senior champion bull, E. B. Marks; Junior champion bull, E. B. Marks; junior champion heifer, H. C. Davis.

Grand Champions—Bulls and Cow, E. B. Marks.

Herds—Aged: 1st, E. B. Marks; 2nd, H. C. Davis; 3rd, Wm. Bishop; young herd, 1st, H. C. Davis; 2nd, E. B. Marks; 3rd, Wm. Bishop.

Calf Herd—1st, E. B. Marks; 2nd, H. C. Davis; 3rd, E. B. Marks.

Groups—4 animals, either sex, 1st, E. B. Marks; 2nd, H. C. Davis; 3rd, Wm. Bishop; 2 animals, either sex, products of one cow, 1st, Wm. Bishop; 2nd, W. C. Davis; 3rd, Wm. Todd & Sons.

### Jerseys.

Bulls—1st, E. L. Brewer, Satsop; 2d, Bert Pease, Ellensburg; 2 and under 3, 1st, T. S. Griffith, Spokane, Wn.; 2nd, J. B. Early, Grandview, Wn.; 3rd, W. H. Cleveland, Gresham, Wn.; senior yearling, 1st, E. L. Brewer; 2nd, Bert Pease; junior yearling, 1st, T. S. Griffiths; 2nd, Bert Pease; 3rd,



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We design and equip cow stables, dairy houses, certified milk plants, creameries, cheese factories and ice cream plants.

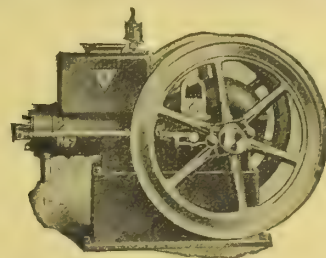
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101 DRUMM STREET  
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"Everything for Dairy and Creamery"



## Holsteins Fresh Cows & Heifer Calves

Over 100 from which to select

Now is the time to buy fresh and coming fresh cows, while the butter fat and milk markets are at their best. With ample shelter and feed and good producing cows winter dairying affords a fair and steady margin of profit in the Northwest. Those who have cows enough but wish to enlarge their herds in the near future will do well to get our prices on some choice high grade heifer calves at once.

We also have some fine two-year-old, pure-bred bulls with high records back on both sides to offer at reasonable prices. Having a large herd of practical dairy cattle on hand we can supply almost any want in the dairy cattle line, as corroborated by our many satisfied patrons.

Numerous selections are being made. Write or make appointment for further particulars.

## VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

## Registered Guernseys For Sale

Now is your opportunity to get a pure-bred young Guernsey bull whose dam and sire's dam are over the 500-pound per year butter records. Don't miss this chance if you want Guernseys.

Write for prices and further particulars. Terms to responsible parties.

Augustine & Kyer

115 First Street  
Seattle, Wash.



Guy H. Chapman, Pomona, Wn.; senior calf, 1st, E. L. Brewer; 2nd, Bert Pease; junior calf, 1st, J. B. Early, 2nd, Wash. State College; 3rd, T. S. Griffith; 4th, Bert Pease.

Cows—4 years and over, 1st and 2nd, E. L. Brewer; 3rd, T. S. Griffith; 3 years or over, 1st and 2nd, T. S. Griffith; 3rd, Bert Pease; 2 years and under 3, 1st, Bert Pease; 2nd, Guy H. Chapman; 3rd, J. B. Early; senior yearling, 1st and 2nd, Bert Pease; 3rd, W. H. Cleveland; junior yearling, 1st, E. L. Brewer; 2nd, Wash. State College; 3rd, T. S. Griffith; senior calf, 1st and 2nd, Bert Pease; 3rd, T. S. Griffith; 4th, E. L. Brewer; 5th, E. O. Erickson; junior calf, 1st, Wash. State College; 2nd, J. B. Early; 3rd, W. H. Cleveland; 4th, T. B. Griffith; 5th, E. L. Brewer.

Champions—Senior champion bull, 1st, T. S. Griffith; 2nd, E. L. Brewer; junior champion bull, 1st, T. S. Griffith; 2nd, E. L. Brewer; senior champion cow, 1st and 2nd, E. L. Brewer; junior champion heifer, E. L. Brewer.

Grand champions—Grand champion bull, E. L. Brewer; grand champion female, T. S. Griffith.

Herds—Aged herd, 1st, E. L. Brewer 2nd, T. S. Griffith; 3rd, Bert Pease; young herd, 1st T. S. Griffith; 2nd, Bert Pease; 3rd, E. L. Brewer; calf, 1st, Bert Pease, 2nd, E. L. Brewer; 3rd, J. B. Early.

Groups—4 animals either sex, get of 1 sire, 1st, Guy H. Chapman; 2nd, Bert Pease; 3rd, T. S. Griffith; 2 animals either sex, produce of 1 cow, 1st, W. H. Cleveland; 2nd, Bert Pease; 3rd, Guy H. Chapman.

#### Ayeshires

Bull—W. J. Domes, McCoy, Ore.; 2 years and under 3, 1st; senior yearling, 1st; junior yearling, 1st; senior calf, 1st and 2nd; junior calf, 1st and 2nd.

Cows—4 years and over, 1st W. J. Domes; 3 years or over, same; 2 years and under 3, 1st and 2nd, same; senior yearling, 1st and 2nd, same; junior, 1st, same; junior yearling, 1st, same; 2nd, Wash. State College; 3rd, W. J. Domes, McCoy, Ore.; senior calf, 2nd, same; junior calf, 1st and 2nd, same.

Herds—W. J. Domes, aged herd, 1st; young herd, 1st and 2nd; calf herd, 1st and 2nd.

Groups—W. J. Domes, 4 animals, either sex, get of 1 sire, 1st and 2nd; 2 animals, either sex, produce of 1 cow, 1st and 2nd.

#### Guernseys

Bulls—3 years or over, 1st, A. L. Giles, Chinook, Wn.; 2nd, E. L. Brady, Satsop, Wn.; 2 years and under 3, 1st, D. H. Looney, Jefferson, Ore.; 2nd, E. L. Brady; junior yearling, 1st and 2nd, A. L. Giles; W. C. Beasey, Beaver; senior calf, 1st, A. L. Giles; 2nd, D. H. Looney; junior calf, 1st, E. L. Brady; 2nd, A. L. Giles; 3rd, D. H. Looney; 4th, A. L. Giles; 5th, D. H. Looney.

Cows—4 years and over, 1st, D. H. Looney; 2nd, A. L. Giles; 3rd, E. L. Brady; 3 years and over, 1st, A. L. Giles; 2nd, D. H. Looney; 3rd, E. L. Brady; 2 years under 3, 1st, E. L. Brady; 2nd, A. L. Giles; 3rd, D. H. Looney; senior yearling, 1st, D. H. Looney; 2nd, E. L. Brady; 3rd, A. L. Giles; junior yearling, 1st, D. H. Looney; 2nd, E. L. Brady; 3rd, D. H. Looney; senior calf, 1st A. L. Giles; 2nd, D. H. Looney; 3rd, E. L. Brady; 4th, A. L. Giles; 5th, D. H. Looney; junior calf, 1st, A. L. Giles; 2nd, E. L. Brady; 3rd and 4th, D. A. L. Giles; junior champion bull, E.

H. Looney; 5th, A. L. Giles.

Champions—Senior champion bull, L. Brady; senior champion cow, E. L. Brady; junior champion heifer, D. H. Looney.

Grand Champions—Grand champion bull, A. L. Giles; grand champion female, E. L. Brady.

Herds—Aged herd, 1st, D. H. Looney; 2nd, E. L. Brady; 3rd, A. L. Giles; young herd, 1st, E. L. Brady; 2nd, A. L. Giles; 3rd, D. H. Looney; calf herd, 1st, A. L. Giles; 2nd, E. L. Brady; 3rd, D. H. Looney.

#### SIDE NOTES WITH BREEDERS AND DAIRYMEN.

Mr. J. H. Taylor, Montesano, is helping Jersey breeders in Washington immensely to boost this valuable breed. He showed at three fairs in Western Washington, winning several first prizes and championship on cow at each place.

Mr. E. L. Brewer, Satsop, Wash., enlarged his circle of acquaintances this year by showing at Spokane. His cow Olympia's Fern attracts attention wherever she appears. Her butter record is at the very top of the breed in this country and type ideal, having most of the fine points of island breeding while in frame she is larger, conforming more to the American standard. This animal represents a good model for Jersey breeders in the northwest to observe in the raising of Jerseys for when bred too small they lose in popularity.

The Burnhanwood Farm, Snohomish, Wash., was a star exhibitor of Holsteins at the Snohomish fair, showing 14 head, among them the noted cow, Chimaum Wayne Boone's Mother, with a record of 137.26 lbs. milk in 30 days. Their heifer Zella Netherlands DeKol, best on the ground, has ancestral record of 80 lbs. milk 3.9 test at 3 years 4 months.

A young prize bull shown is a grandson of King Walker and Rag Apple Korndyke and Pontiac Pet breeding with excellent records. The bull Diamond Burke DeKol Karol Bos, 4 year old, was winner of sweepstakes of all classes and all herds. The exhibit from this farm made an excellent showing of quality throughout and is becoming one of the noted purebred Holstein herds of the northwest.

Messrs. H. K. Stockwell and A. H. Buck, Monroe, has a herd of 70 registered Holsteins, many of them in the A. R. O. class. They recently bought from A. W. Morris & Son, of Woodland, California, the young bull Prince Arlia DeKol Burke, which has noted records far back on both sides. This young sire has excellent type and some good records are anticipated from his progeny.

Six years ago Mr. Herman Steffen, Monroe, Wash., concluded he might just as well devote some of his energy to the raising of cows with records, as those with uncertainties. So he bought 3 pure breds, 1 bull and 2 heifers. After the third year he found by experience that the recorded animals of good health and productive capacity brought from two to three times as much profit as like stock unregistered. His neighbors insisted on making selections from his herd so in selling he had to replenish from other good breeders besides his own raising. Last year a car load of pure breds was purchased in Minnesota. He showed 18 head at Snohomish, has a total of 60 registered cattle and won a liberal

# THE Yakima Valley Breeder's SECOND ANNUAL Consignment Sale



One of the heifers, a show cow, which made nearly 18 pounds butter a week, consigned in this sale.

## Thursday, Nov. 19, 1914

85

AT THE

Head

## State Fair Grounds North Yakima, Wash.

Eighty-five head of registered Holsteins, mostly heifers that are bred to the best sires in the Northwest.

About 30 head of heifers bred to Annie DeKol Lakeside Model, whose poorest daughter at 3 years old made 17½ lbs. butter in 7 days.

His get was undefeated when competing at the State Fair this year, and seldom have been defeated at any time.

Some daughters of and a lot of heifers and cows bred to Mutual Fobes Longfield DeKol, the Senior and Grand Champion bull at the State Fair, 1913 and 1914. His get was defeated but one time.

He has 6 sisters that average over 33 lbs. butter for 7 days.

Some daughters of Sir Johanna Ruth Fayne, who stands without a peer when considering the ages and the production of his daughters.

We only ask that you come and see these cattle and then study their breeding and the breeding and individuality of the bulls to which they are bred. We are convinced they are the best lot of young cattle ever offered at auction in the West.

Consignors E. B. Marks, H. C. Davis, Wm. Todd & Sons.

Auctioneers Geo. A. Gue, J. W. Hughes, L. H. Linbarger and G. E. Gochnour.

This Ad. will not appear again, so write at once for catalog, which will be ready November 1st.

Managers H. C. Davis, Granger, Wash., and E. B. Marks, North Yakima.



share of the prizes offered. Twelve of his cows are in the A. R. O. class and a good sire of Hengerveld breeding is now at the head of his herd.

Shadringer Bros., proprietors of Cherrywood farm, Snohomish, showed some good Holsteins at the Snohomish fair, including the 2 year old bull, Hollywood Canary, with ancestral records of 30.53 lbs. butter in 7 days. They have a good foundation for the raising of high record cattle.

Among Jersey cattle exhibitors at Snohomish, Mr. J. F. Sexton and E. L. Lloyd, Snohomish, both had good milk herds, well up toward the 500 pound per year butter records. Their cattle represented practical demonstration at the pail rather than show condition and the honors were well divided.

Mr. Charles Richardson, Tacoma, was an exhibitor of Jersey cattle at Western Washington Fair, Puyallup, for the first time and his show of high quality milk type attracted much attention. The Jersey exhibit at this fair including Mr. Richardson's entry was fully equal to that shown at any other place in the Pacific Northwest this year.

Wm. Bishop's cow, Chimacum Wayne Boone attracted much attention at the Washington State Fair.

Mr. Bishop took over the young cow, Cascade Maria, paying J. L. Todd & Son, North Yakima, for her a sum said to be over \$1500. He has a bull for which Stevens & Son, of New York, offered \$5000. With this trio Mr. Bishop feels he is well fortified against contestants for high records during the next few years. Mr. Bishop understands and enjoys pure breeding of Holsteins thoroughly.

The grand champion Guernsey cow, Veda May and the Junior Champion Guernsey bull calf, Brutus Bralee of Judge J. E. Brady, Satsop, were very attractive exhibits at the Washington State and at the Western Washington Fair this season.

#### Thompson's Holsteins: Prize Winners.

E. H. Thompson, of Mt. Vernon, exhibited 11 head of pure bred Holsteins at the Skkagit County Fair, Burlington, last month. Among the number was a Pontiac bull, purchased in New York, whose dam, as 4 year old, has a record of 30¼ lbs. butter in seven days.

Mr. Thompson won Champion sweepstakes and a \$65 cup (special) by the J. B. Agen Creamery Company, Mt. Vernon. His other prizes were 4 firsts, 3 seconds, and 4 thirds. The first prize Pontiac bull is a son of Old Pontiac.

#### CANADIAN HOLSTEIN SALE POSTPONED

Owing to unavoidable causes the Public Sale of Holsteins by the H. F. Association of Canada announced for October 29 in our September issue has been postponed indefinitely according to instruction from secretary Thomas Laing, Eburne, B. C.

#### DAIRY STOCK AT SALEM

According to the expressed opinion of John L. Smith, in Spokesman Review, the live stock show at the Oregon State Fair surpassed that of any previous year.

Quality was shown in every class of the dairy breeds and nine to ten exhibitors for a breed was common.

There was some dissatisfied with the awards in some of the classes, mostly in the Jersey classes, owing

to the different types of island and American bred cattle, and the sooner the small island type is dropped in this country the better it will be for the breed. They are too small for the general farmer and dairyman. There were some beautiful animals in the herd of C. P. Hembree of Monmouth, Ore. He had a string that looked as if they could win anywhere, and they won nearly all the firsts. T. S. Griffith of Spokane played in poor luck, and in some classes he should have stood higher. However, his great bull took grand championship. In Guernseys three good herds fought it out. Mr. Looney of Jefferson, Ore., got some of the best of it. The big fight was in the aged bull class between A. I. and J. E. Hughes and A. I. Gile, the former winning, and was made grand champion, although most people would have turned these two bulls the other way.

The Holsteins made a big show and a lot of good ones came before the judge. The grand champion at Yakima and Spokane came together in the old bull class and the Hazelwood bulls from Spokane took first and second over E. B. Marks of Yakima, also in the aged cow class. The grand champions from both fairs met here, the Hazelwood cow getting first and E. B. Marks second. Hazelwood got all herd prizes, Marks making a good second. The great 2-year-old bull of D. McKeown of Gresham, Ore., weighing over 2300 pounds, was first over Mr. Bishop's new bull, also a fine specimen.

Mr. Bishop won grand champion female.

The hog and sheep shows were both wonderfully good, but not quite up to Spokane, although the whole fair is a little ahead of Spokane.

A good feature of the Oregon fair is their meeting of the different breeders. They tell the fair and the state what they want, and usually get it, and it is about time the breeders of Washington were doing the same. Last night the Oregon breeders gave a banquet and over 100 were present. A very pleasant evening was spent. O. M. Plummer of Portland acted as ringmaster. A great deal of credit is due Mr. Hogg as general superintendent of the live stock for his untiring interest in the breeders' wishes, and everything he could do was done.

#### Ayeshirre at Salem.

The principal exhibitors of Ayeshires at the Oregon State fair were J. Domes, McCoy, Ore., and Frye & Carley, Salem.

Mr. Domes won most of the prizes. Jersey, Oregon State Fair.

The following represented the rank and the exhibitors of Jerseys at Salem.

Champions—Bull, over 2 years—1st, Morocco's Pioneer, Thomas S. Griffith, bull under 2 year—1st, Roxy's Rochett Noble, C. P. Hembree. Cow, over 2 years—1st, Bosnia's Princess. C. P. Hembree. Heifer, under 2 years—First Noble Peers Jewel, C. P. Hembree.

Grand champions—Bull, any age—First, Thomas S. Griffith (Morocco's Pioneer). Cow or heifer, any age—First, Noble Peers Jewel, C. P. Hembree.

Graded herd—First, C. P. Hembree; second, Thomas S. Griffith; third, Frank Loughary.

Bull, 3 years or over — First, William Schulmerich, Hillsboro, Ore.;



Ninety head of pure-bred and high-grade Holsteins and Guernseys came through in good shape in our October shipment, after selling a carload on the way out to parties in Northern Idaho. In the lot just received are 10 pure-bred Guernseys, mostly two-year-old heifers, besides 20 choice high-grade cows and youngsters, now ready for buyers. The Holsteins are, as usual in our shipments, fresh and near fresh cows of large milk capacity. In youngsters buyers have an opportunity to get some pure-breds with high ancestral records at inside prices. We also have young pure-bred stock of our own raising very choice. Always glad to give full particulars. Write or call.

## FRYAR & COMPANY

Please Mention  
This Paper.

SUMNER, WASH.

### SECOND ANNUAL PACIFIC INTERNATIONAL

# HOLSTEIN SALE

**150** Registered Holstein Cattle **150**

At Union Stock Yards, North Portland, Oregon  
Two days sale

**DECEMBER  
11-12, 1914**

All stock free from blemish and Tuberculine Tested. Cows and heifers of fine breeding and individuality, together with high class bulls, many of serviceable age, whose breeding is the very best to be had; having records on both sides, in the 30-lb. list.

#### DON'T GO EAST FOR YOUR BULLS

as we will offer more high-class sires, collectively, than was ever offered before in a public sale. REMEMBER, this is one of the largest and best sales ever held in the United States, and the consignors are men of fine reputation and breeders of the best stock to be found.

Make your arrangements to be with us on the above-mentioned dates, and you will not be disappointed with the splendid animals that we will offer to you at that time.

Write for catalog and further information to

**GEO. A. GUE, Manager**  
RIDGEFIELD, WASH.

### HAMPSHIRE SWINE "THE HOG WITH- OUT A HOLLOW"

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.



second, Frank Loughary, Monmouth, Ore.; third, William Schulmerich; fourth, C. P. Hembree, Monmouth, Ore.; fifth, Johnson, Taylor & Lindeman, Corvallis, Ore. Bull, 2 years and under 3—First, Thoms S. Griffith, Spokane, Wash.; second, G. G. Hewet, Monmouth, Ore.; third, F. E. Lynn; fourth, W. N. Cleveland, Gresham, Ore.; fifth, J. R. Cole, Molalla, Ore. Bull, 1 year and under 2—First, R. W. Hogg, Salem, Ore.; second, C. P. Hembree; third, C. P. Hembree; fourth, J. H. Van Meter, Oregon City, Ore.; fifth, G. G. Hewett. Bull, senior calf—First, C. P. Hembree; second, F. E. Lynn; third, Frank Loughary; fourth, William Schulmerich; fifth, C. P. Hembree. Bull, junior calf—First, C. P. Hembree; second, Frank Loughary; third, F. E. Lynn; fourth, F. E. Lynn; fifth, C. P. Hembree.

#### OREGON HOLSTEIN CATTLE CLUB

The new officers of the Oregon Holstein Cattle Club are: President, P. A. Frakes; vice president, Mr. Luscher; sec., Thos. Carmichael, Gaston, Ore. These were elected at the annual meeting held during the Oregon state fair last week. Much routine business was done and it was decided to hold their next meeting in Portland during the Pacific International Livestock show. A committee, consisting of Messrs. Frakes, Newell, and McKeown, was appointed to examine the cattle offered for sale at the auction held during the Pacific International under the direction of this club. A resolution, recommending that the Holstein Association of America keep a milking herd on exhibition during the entire time the Panama-Pacific exposition is in progress, was adopted.

#### WASHINGTON JERSEY CATTLE CLUB

During the state fair at North Yakima, the Jersey breeders of Washington perfected an organization with E. L. Brewer, Satsop, president. D. S. Troy, Chimacum, Secretary. An attempt will be made to enlist all who are raising pure bred Jerseys in Washington and those who have not received notice will please communicate with the secretary.

#### WASHINGTON PURE BRED LIVE STOCK ASSOCIATION.

For the betterment of the live stock condition in Washington looking to their protection in the legislature and

other matters the Washington Pure Bred Live Stock Association was organized at Spokane, September 19, with 20 charter members.

An aggressive campaign will be made looking to the securing of a large membership. In other states of the middle west these associations have been productive of much good and, with the large number of pure bred stock breeders now in the State of Washington, much good will result from the association.

Judge E. R. Brady of Satsop, Wash., was elected president; David S. Troy of Chimacum, Wash., vice-president; E. E. Faville of Spokane, Wash., secretary-treasurer. The executive committee is composed of the following pure bred live stock breeders: Geo. L. Smith, Spokane, Wash., Chas. M. Talmadge, Newport, Wash., F. M. Rothrock, Spokane, Wash.; Jas. N. McCroskey, Fishtrap, Wash.; G. W. R. Peaslee, Spokane, Wash.; G. W. Brewer, Satsop, Wash., and Geo. M. Wilson, Wilbur, Wash.

The next regular meeting of the association will be held during the Northwest Live Stock Show at Lewiston, Idaho, November 30th to December 5th.

#### SILAGE AND ALFALFA AS PART RATION

##### Dried Beet Pulp Supplements Both Feeds.

"I have seen more indigestion in dairy cows since I've been here than I ever saw in the east," says H. N. Woodward of Tahoma County, Cal., writing in the Pacific Rural Press. "Hardly a week passes but some one phones that his cow is sick, hair turning the wrong way, bloating a little."

"The cows have impaction of the bowels, due to over-eating of alfalfa hay. Nearly everybody here feeds nothing else. I tell them to give the cow a dose of salts, but several cow have died around here.

"Alfalfa isn't a balanced ration. It supplies protein; but carbohydrates must be supplied by other feed."

This lack of carbohydrates can be supplied by feeding dried beet pulp, which makes a perfectly balanced ration in combination with alfalfa

"Some of the silage in California is poor stuff, especially in the resaw silos which are not built tight enough to exclude all air from the sides."

"There are two other faults which

## Albers' Calf Meal

Why feed high price butter fat to the calf when you can raise a better calf by feeding our calf meal at a cost to you of less than one-third the value of butter fat? Save money by sending your name today for a copy of our free pamphlet on calf feeding. It contains information of great value to dairymen, who should also know the full composition of our molasses feed and its price laid down at nearest dealer.

#### ALBERS MOLASSES FEED

Write at once for free Calf Meal and Molasses feed information and figure on making a larger profit margin for yourself.

## Albers Bros. Milling Co.

SEATTLE, WASH.

Largest Cereal Millers in the West

Please mention this paper.

## Registered and High Grade HOLSTEIN CATTLE

The demand for fresh cows is becoming brisk as usual this time of the year, naturally so as this is the country for winter dairying. We are in position to supply some very choice, high-grade, deep milkers and some pure-bred youngsters of both sexes. Those who wish good foundation stock or immediate heavy milkers should write or call.

H. S. ROYCE

Savage-Scofield Bldg., A St.  
TACOMA, WASH.

Please mention this paper

## Meadow Brook Farm

### Breeders of Pure Bred Ayrshire Cattle

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

A. P. Stockwell, Aberdeen, Wash.

## Turner & Pease Co., Inc.

813-815-817 Western Ave. Seattle

Leading Manufacturers of Butter in the State

We pay cash for butter fat and eggs at correct market prices.

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington

### Electric Light Farm

## A. J. C. C. Jerseys

FOR SALE

Son of Gertie's Brown Lad whose dam has official record of 653 lbs. butter in one year. The dam of this 5-months-old calf made over 10,000 lbs. milk and 595½ lbs. butter with first calf. Solid color, mulberry fawn, priced at \$100.00 for quick sale.

Burt Pease Ellensburg, Wash.

Please mention this paper

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50 Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O. - we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

#### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

JEFFERY HILTON,  
Marysville, Wash.



Registered Holstein cow Eldred Clothilde 2nd, with her triplets, a fine trio all fit for the show ring. She gave 66 lbs. milk a day on pasture last season, testing 3.8 per cent. fat. Is out of Aggie Fayne Homestead breeding. Owned by N. P. Sorensen, Laurel, R. F. D., Bellingham, Wash. This is certainly a record for Whatcom county.



people are specially prone to fall down on. Silage should be cut finer—into half-inch lengths."

"Sometimes they set the knives right, but pretty soon the knives get dull and just tear the pieces apart in busy shreds. The tough corn husks especially, often go through whole. Cutting in bigger pieces might be all right if it were heavily tramped, but people don't tramp the silage enough as it goes in. Anyhow when part is fine and part coarse, the husks and coarse pieces go to the far side while the feathery stuff settles straight down."

"Another trouble is with silo corn too dry. This does not occur in the Pacific Northwest, only in hot and

dry sections. Nothing takes the place of the natural juices, but if it is to dry, add lots of water—there is very little danger of getting too much if the silo does not leak and waste good juice."

Some dealers are also handling what is known as molasses—dried beet pulp, being simply the plain beet pulp with the addition of beet molasses dried. This makes a very sweet ration and on account of its sweetness is particularly palatable to stock. We understand that it costs the same price as the dried beet pulp and is put up in the same way. It has the same feeding value as the plain with the addition of molasses and is a splendid feed for fattening.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

A. BENSON  
Lynden, Wash.

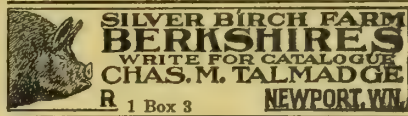
## Windcrest Jersey Farm

Some choice young registered Jerseys for sale, both sexes. Large producers of milk. Test 5.5 to 6.5%. Herd headed by Eminent. Write for prices.

O. F. LEWIS

R. F. D. 1

Blaine, Wash.



Registered Holstein cow Minnie Star No. 76545, seven years old, has a seven-day milk record of 572.7 lbs., and 20.485 lbs. butter. One of the 72 registered Holsteins of Carnation Stock Farm to be offered at public sale November 11th.

## BUYING DAIRY CATTLE.

Opportunities in the Northwest  
Unsurpassed.

Northwest Horticulturist and Dairyman—

Only a few days ago I received a letter from a gentleman living in this State, asking if it would not be to his interest to go east for a car-load of cattle, that he was anxious to get a good lot of cows, at a low cost and if there were reasons why he could not gain by this eastern shipment, he would appreciate such knowledge. My reply was, not to go east for his cattle, as stock here at home could be had for less money, than he could buy the same class for, in the east, plus expenses of trip and shipment. Also it would require, practically, one years time for the stock to recuperate, from the change of climate and hardships of trip. Often cows have lost their calves, en route or from the effects of the long journey, and last but not least, many of the eastern sales, dealers and breeders, have proven themselves un-fair to the liberal patronage of the western buyer. They have often taken advantage of his lack of knowledge concerning pedigrees, and in many instances, have sold for high values, animals of inferior breeding; also certificates of tuberculin test have been falsely furnished, yet in such a way that it

was impossible to come back with proof against the reliability of such test. Such dealings have not only been handed to the unsuspecting Westerner, in one or two instances, that we know of but it has been carried on in wholesale proportions, and their diseased cattle are still being shipped to us. Only last May, a shipment of cattle, were re-tested by a Federal Inspector, of Portland, and if I remember correctly, this Inspector told me, that he got 27 reactors out of the 38 head which composed the shipment. Is such treatment as this deserving of your patronage? Surely not.

During the 15 or 20 years of breeding of Holsteins in the Northwest, we have established some very fine herds. In fact some of our herds have reached that high degree of excellence, attained only by years of successful breeding, and from our breeders in the N. W. stock of the highest type, can be purchased. For those desiring to purchase stock, splendid opportunities will present themselves in the three fall sales that are soon to take place, and promoted by some of our very best breeders.

On November 11, the Carnation Stock Farm, located on the C. M. & St. P. R. R. at Carnation, Wash., or reached by Ferry & Auto, from Seattle, via Kirkland, will sell 72 head of high bred Registered Holsteins.

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice purebred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

## JERSEY BULL FOR SALE

Eminent Inland Empire, out of Eminent and Golden Fern's Lad, which has over 60 daughters in A. R. O. class. A splendid animal, having made good in my herd. Price reasonable. Full particulars on request.

NELS JORDAL

R. F. D. 2

Lynden, Wash.

**HOLSTEIN BULL**—Sir Yakima Korn-dyke, sired by Korndyke Hengerveld DeKol, for sale. Full particulars and price on application. L. F. KRASSIN, R. F. D. 2, Snohomish, Wash.

## Crystal Springs Farm

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

GUY C. CHAPMAN,  
Pomona Wash.

**GOOD REGISTERED BERKSHIRES**—Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.

## YEARLING JERSEY BULL CALF

Sired by a son of Eminent and out of an imported cow with authenticated test of almost 600 lbs. butter in eleven months. This is a show calf and of good size. Price \$125.

DAVID C. DILWORTH  
Buckeye, Wash.

## REGISTERED AYRSHIRE BULL FOR SALE.

Age 3 years. Write for particulars and price.

F. O. HALL Sedro-Woolley, Wash.

**FOR SALE**—Jersey bull calf, grandson of Noble of Oakland which has many tested daughters, and sold for \$15,000. Dam Allie Reeves, out of Register of Merit breeding. Write for price and further particulars. JOHN H. CHAPMAN, Tacoma, Wash., R. F. D. No. 2, Box 69.

**GUERNSEYS**—Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.

**FRIESIAN-HOLSTEIN CATTLE**—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. N. P. SOR-ENSON, Bellingham, Wash., R. F. D. 2.

## MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

## HOPE FARM GUERNSEYS

Some very choice youngsters for sale at reasonable prices; pure bred, prize winning stock. Write for particulars.

H. B. DOUGLAS, Prop.  
Ferndale, Wash.

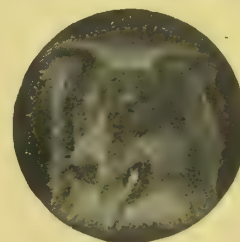
## REGISTERED JERSEYS

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. TAYLOR  
Montesano, Wash.

**FOR REGISTERED DUROC JERSEY** bred sows and male pigs, write McK. Edwards, Valley, Wash.

## Oregon Collie Kennels



Established 42 years. Choice Puppies (either sex) Breeding Pairs Bitches in whelp and stud dogs for sale.

Send 2c stamp for illustrated catalog.

C. D. HALEN  
Shadeland Farms  
R. F. D. 2  
Amity, Oregon

A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.

THE E. N. PEASLEE CO.,  
Clarkston, Wash.

## Purebred Durocs

Very choice young Duroc pigs offered at reasonable prices. Early application should be made. Write today.

We buy and sell large quantities of choice hams and bacon. Quality is our motto.

AUGUSTINE & KYER  
115 First St. Seattle, Wash.



I have inspected these animals and find them to be a very fine lot. The sale will start at 12:30 p. m. A visit to this magnificent plant is really worth the trip alone.

On November 19th, at North Yakima, Wash., Messrs H. C. Davis, E. B. Marks, and Wm. Todd & Son, will sell 85 head, of very finely bred animals. The reputation of these gentlemen and the high standing of their herds, make further comment on my part unnecessary; and I am sure that no one will be disappointed in the high character of the stock offered, by these breeders.

At North Portland, Union Stock Yards, on December 11th and 12th, the following consignors, will offer in a two day sale, 150 head of as fine a lot of Registered Holsteins, as has ever been brought together in a public sale: Albert Johnson; W. K. Newell; Stickney & Barnard; Munroe Co.; E. B. Marks; A. C. Mills; H. S. Royce, Hollywood Farms; J. C. Roberts; and Geo. A. Gue.

I have termed this the Guarantee Sale of the West, in-as-much, as all stock must be free from blemish, Contagious Abortion, Tuberculosis, and not over eight years of age.

I take great pleasure in extending to all your readers a cordial invitation to attend the above mentioned sales, and I am sure they will be well repaid.

GEO. A. GUE.

#### FAT STOCK AT FAIRS

In the beef cattle, at the Washington and Oregon State Fairs, two very fine herds of Shorthorns were shown, one from the herd of James H. McCroskey of Sprague, Wash., and one from A. Chalmers of Forest Grove, Ore. Mr. McCroskey got grand champion bull, grand champion cow, both junior championships, first in aged herd, young herd and calf herd and first get of sire.

Although, at Salem, Mr. McCroskey got most of the prizes, yet Mr. Chalmers had a very fine lot of cattle, mostly his own breeding, and with another year's fitting there may be a different rating of these two herds. Their Scottish Baron needs a little more fitting, as do some of their females, but as the cows in the herd are suckling their own calves, they could not be expected to be in top show condition.

The McCroskey herd was seen at Spokane. They are in top condition and are by far the best lot of Short-

horns seen in the Coast states this year, according to the opinion of Mr. J. L. Smith.

F. H. Porter of Halsey, Ore., had the only Red Polled cattle and made a very good showing, but had it all to himself.

G. S. Hechtner of Chariton, Iowa, had the only Galloways and a better showing has never been made in the west of that Scotch breed.

Herefords were a rather small show and not quite up to quality of former year, although some very good cattle was shown by George Chandler of Baker City, Ore., and Henry Thiesen of Sweetwater, Idaho, Mr. Chandler taking most of the prizes and both grand championships. These herds were both at Spokane. The Chandler herd was much better fitted and was therefore shown in better bloom. The best part of the beef cattle show was the fat steers shown by the University of Idaho, and great credit should be given the boys who fitted them. Ross Abel, who has done the fitting, is a graduate of the college, and his splendid work should be great encouragement to boys who desire to get an education along the line of live stock husbandry at a college where a good chance is given him in a first-class herd. The steers are a very fine lot and are a great credit to the college.

#### HOG EXHIBIT AT WASHINGTON STATE FAIR.

The highest honors of the hog show were divided between L. H. Linbarger of North Yakima, who took grand champion of all the breeds on his Poland China boar, and I. L. Jones, of Prosser, who took grand champion sow of all the breeds on a Tamworth. The Berkshire class was especially strong and the contest close.

#### Duroc Jerseys.

Exhibitors of this class were W. R. White, Mabton, and John B. Peterson, of Montbourne, both winning their share of prizes. The association special of \$48 went to White. Best young stock and sow bred by exhibitor to Peterson. Mr. Peterson holds the record of the state if not of the country for largest daily gain for 6 months, being more than 1½ pounds per day.

#### PEERADA BERKSHIRES

Headed by Artful Masterpiece 3rd splendid son of Masterpiece, the world's most famous Berkshire. Bred gilts, boars and weanling pigs. **NEWTON H. PEER**  
Mention this paper TACOMA, WASH.

#### Poland China Boars

Have some good ones 4 months old, also boar pigs of good breeding. Gilts all sold.

F. C. BRUCE  
Grandview, Wash.

#### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

ALBERT C. HERRE  
Route 1 Everson, Wash.

#### O.I.C. Hogs

#### English Shire Horses

Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

#### REGISTERED DUROCS (Immune to Cholera)

All ages for sale, male or female, from prolific families. Shamrock Wander heads the herd. Shamrock Daisy farrowed 12 pigs. Shamrock Rose farrowed 14 pigs. Selah Agness farrowed 16 pigs.

Write for prices. A. E. IRISH, Wapato, Wash.

#### HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. De KALB,

De Kalb, Iowa

## First Annual Fall Sale

WEDNESDAY, NOVEMBER 11th, 1914

### 71-Holstein-Freisian-71

#### REGISTERED CATTLE

All splendid individuals, a number with good A. R. O. records. Listed as follows:

#### 28 Pure Bred Registered Holstein Cows

with good records. These cows are bred either to Ollie Johanna Sir Fayne No. 59096, whose sire—Sir Johanna Fayne—is sire to 22 A. R. O. Daughters; or Dutchland Governor Sir Colantha No. 90477, whose sire—Colantha Johanna Lad—is sire of 55 A. R. O. Daughters and 21 proven sons with 97 A. R. O. Daughters.

#### 16 Pure Bred Registered Holstein Heifers

from 1 to 2 years. These heifers are bred to Dutchland Governor Sir Colantha No. 90477, whose sire—Colantha Johanna Lad—is sire of 55 A. R. O. Daughters and 21 proven sons with 97 A. R. O. Daughters.

#### 10 Pure Bred Registered Holstein Heifers

6 to 10 months old; well marked; sired by Dutchland Governor Sir Colantha No. 90477; Premo Gerben Julip No. 89295; Lad Ormsby Kakenstein No. 95288.

#### 14 Pure Bred Registered Holstein Bull Calves

6 to 9 months old; well marked; good breeding. Sired by Dutchland Governor Sir Colantha No. 90477; Premo Gerben Julip No. 89295; Lad Ormsby Kakenstein No. 95288.

#### 3 Pure Bred Registered Holstein Bulls

about 2 years old. Good individuals; well bred; sired by Lad Legend of Kakenstein 2d No. 64568.

The above list of pure bred registered stock is a Holstein show in itself. All over 6 months old are tuberculin tested.

Send for descriptive catalogue, giving details and records of four generations on individuals offered at this sale. Catalogue sent free to interested buyers. Address **Carnation Stock Farm**, 936 Henry Building, Seattle, Wash.

Farm located at Carnation, Washington, in Snoqualmie Valley (on C. M. & St. P. R. R.) 15 miles from Seattle by auto via Kirkland.



Lunch served on the grounds free. Information about special transportation sent upon request. Sale will start promptly at 12:30 Wednesday, November 11th, 1914. Terms of sale: One-third cash, balance three and six months, with approved security bearing 8 per cent.

AUCTIONEERS—Gue & Linbarger.

## MILKING MACHINES

There are 168 Hinman Milkers in successful operation in Washington, all sold during the past six months. Every buyer has 30 days' trial, but these all prefer to keep the machines. Do you want full information about them as to capacity, moderate price, their simplicity, durability, efficiency and to ascertain where one may be seen in operation by its satisfied owner, then write today, and mention this paper, to

E. E. BURNS, Mt. Vernon, Wash.

## BERKSHIRES

Two boars, fit for service. Will benefit any farm herd. Now booking orders for weaned pigs, \$10 to \$15 each. Write us if you want foundation stock.

WOODLAND FARM  
Thurston County Lacey, Wash.  
P. S. Artichokes—We can book a few more orders for seed.





## NORTHWEST SWINE BREEDERS ORGANIZE

Swine breeders of the Northwest met at the Interstate Fair Saturday and organized the Swine Breeders' association.

The following officers were elected: President, L. H. Linbarger, North Yakima, Wash.; vice president, Harry Somers of Bozeman, Mont.; vice president, C. W. Felt, Nez Perce, Idaho; vice president, J. H. T. Smith, Pullman, Wash.; E. E. Faville, superintendent of cattle department of the interstate fair, was elected as secretary-treasurer of the association.

A committee on constitution and by-laws was appointed with C. M. McAllister as chairman, which will begin work immediately. A yearly due of \$1 was set and about 40 enthusiastic men came forward with their dollar. Arrangements will be made to hold the next meeting during the fair at North Yakima.

## CHOICE HOLSTEINS SOLD BY VAN WOERDEN &amp; FISHER.

During the early part of this month Mr. A. Meusreau, of Wapato, Wash., purchased a carload of very choice Holstein cows from Van Woerden & Fisher, of Thomas, Wash. The selection was exceedingly good throughout, each and every animal choice, in full health, fine vigor and heavy producer, all young and well bred.

Mr. Meusreau has recently purchased a tract of land near Wapato, in Yakima county, and is preparing to build up a large dairy herd by raising young stock from this foundation herd mostly. He also bought from Van Woerden & Fisher the pure-bred sire Sir Johanna Korndyke 4th, whose sire is Sir Johanna Korndyke and his dam Ruth Pietertje De Kol Tirania, the show cow which won first prize at King County Fair last year. This young bull has excellent dairy features and will hardly fail to make good on high quality offspring. It is Mr. Meusreau's intention to gradually work into the breeding of pure breeds. He is manifesting a deep interest in the dairy industry, and is likely to become a congenial companion to the pure-bred Holstein owners who make up the happy family of leaders in the dairy show ring of Washington.

Van Woerden & Fisher are also closing up a sale of a bunch of fresh milk cows to the Pure Milk and Dairy Company of Seattle, besides filling orders from numerous buyers of individual animals. They have some choice fresh cows and a nice bunch of heifer calves in their herd at this time and are preparing to bring further shipments from the Eastern states next month.

## HORSE EXHIBIT AT YAKIMA.

## English Shires.

The exhibit of horses at the Washington State Fair was not large, but the quality was well high perfection from the standpoint of practical usage, beauty and soundness all combined.

The English Shires were exhibited by A. L. Pierce, Granger, Wash. His mare Willamette Pride easily won first place in class and grand champion. Her colt was also first in class and grand champion besides being awarded first as produce of mare. His 3-year-old stallion was also first in class. This exhibit of horses represented ideal drafters as to size, proportion of flesh to limbs, sinew, bone and muscle, beautiful in shape and action, quali-

ties in every way ideal in horses which must pull heavy loads. Mr. Pierce is keeping away from that form of horse which is overloaded in flesh, taking the position that horses are for power and speed service rather than for "steak," or merely to sell through "horse companies."

Exhibitions of Percherons were Stanley Coffin, North Yakima; Reservation Horse Company, Toppenish; Rouleau Bros., Moxee, and J. A. Adams & Son, North Yakima, the awards being well divided.

Clydesdales were shown by O. I. Trice, Grandview. Prizes without competition.

J. J. Miller, Sumner, Wn., exhibited the Registered Holstein bull, Kaan Selah Newman, a son of the famous Margie Newman, at the Western Washington Fair. His weight at 3 years is 2250 pounds, was awarded 2nd prize.

## DE LAVAL EXHIBIT AT FAIRS

The De Laval Dairy Supply Company had an exhibit at the fairs this year which was highly educational. Particularly at the Western Washington Fair was their complete equipment attractive to visitors interested in Dairying. There were cream separators, ensilage cutters, and alpha engines to operate them. There was a green feed silo and corn was made into ensilage. There were manure carriers, and stanchion fixtures, all looked good to the dairymen who are already in possession of some good cows.

## WOUND WASH FOR ANIMALS

To disinfect and protect a wound on an animal from flies the Information Bureau, U. S. Department of Agriculture submits the following remedy and formula:

Oil of turpentine ..... 1 dram  
Phenol ..... 1 dram  
Cottonseed oil to make .... 4 ounces  
Mix and apply freely to wounds.

It is stated that this remedy is highly effective and is widely used. It is said to induce healthy granulation of wounds.

## CHORING MADE EASY

The Nickerson MacFarlane Machinery Company had an electric light plant exhibit at the Western Washington Fair, also a power wood saw outfit operated by a bull-dog engine. The cost of these power plants are now so reasonable that it is little wonder many farmers are figuring on an installation.

The daily chore of sawing wood, pumping water, generating light and running the cream separator becomes a more agreeable duty with satisfactory machinery properly arranged and installed.

## POULTRY

## EGG HANDLING AND SELLING METHODS.

Eggs are rather scarce and high in price at this season of the year, and farmers realize they should more carefully observe and practice methods which will redound to their interests.

Here are rules advised by the Missouri College of Agriculture for the care of eggs on the farm:

1. Market only eggs of standard size—24 ounces or more to the dozen.
2. Sort out exceedingly large or very

## EGGS AND CHEESE

We are handling quantities of these satisfactorily for producers. Write for particulars.

WASHINGTON CREAMERIES ASSOCIATION  
E. Hazelton, President. 1114 Western Ave.,  
O. C. Van Houten, Manager. Seattle, Wash.

## THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

## EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES  
SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK.  
Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.  
THE TANCRED FARMS. KENT, WASHINGTON.

## HENS+SPROUTED OATS=EGGS



Hens like cows must have green feed both winter and summer for best results. **GREEN SILAGE OR MILK SPROUTED OATS=EGGS**  
No feed for eggs has ever been produced that equals the Sprouted Oats.  
To get great quantities of sweet, crisp sprouts, buy a **DOUBLE QUICK GRAIN SPROUTER**  
The Perpetual Poultry Silo  
Sprouts in 24 hours. Grows 2 inches daily. Makes 2 to 4 bu. feed from one of grain. Pays for itself quickly. Thousands in use. Has changed many an expensive flock into profit payers. Made in 6 sizes from 10 to 1000.  
**CLOSE-TO-NATURE COMPANY**  
FRONT ST., COLFAX, IOWA.

It is the experience of leading farmers in Western Washington the past year that sprouted oats is very effective for egg production. Used as a leading part of the poultry ration the cost of eggs is kept at the minimum figure. A crop is thus easily turned into cash.

The Oat Sprouts are sold by

## Poole's Seed &amp; Implement Co.

1507-9 Pacific Ave.  
TACOMA, WASH.

## DUCKS

## The Best In White Runners

WE ARE NOW OFFERING FOR SALE

## Drakes, Trios &amp; Breeding Pens

Bred from the Best American Strain

Write for prices and booklet

E. E. BLOOMFIELD

Hillhurst, Wash.

Box 22D

small eggs.

3. Avoid dirty eggs by keeping clean quarters. Dirt can be removed with a damp cloth, but eggs should not be washed.

4. Remove males from flock as soon as the breeding season is over. The presence of the male birds in the poultry flock destroys \$500,000 worth of eggs each month during the summer. Prevent this loss by the production of infertile eggs. Fertile eggs do not keep well, it costs money to feed surplus males, and the hens are more productive when no males are present.

5. Reject eggs from stolen nests; that's where many of the rotten eggs come from.

6. Store eggs in cool, well ventilated places. Heat assists in chick development, and also increases the shrinkage.

7. Keep eggs away from odors, such as those from kerosene, cabbage, rotten food, fresh paint, etc. Food also influences flavor; only clean food should be fed.

## PEDIGREED COCKERELS

From Trapnested

## S. C. White Leghorns

and

## Barred Rocks

## Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

Dept. H HADLOCK, WASH

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL  
Puyallup, Wash.

## EGGS OR CASH

Directions for getting hens into good laying condition in shortest time possible is given in every package of our Herculean Strike Breaker. Sold by dealers, or write to manufacturer for literature, etc.

E. H. ROMBERGER

Sta. F. Seattle, Wash.

## Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. F. ALWARD  
Orting, Wash.

## EGGS and BABYCHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

FRED A. JOHNSON

518 35th St., Tacoma, Wash.

8. Market eggs once or twice weekly. An egg deteriorates in quality with age.

9. Insist that your dealer purchase eggs on a "loss off" basis, not just as they come in. At present the dealer buys all eggs, good, bad and indifferent, at the same price, and does not recognize the difference in quality. The result is that an average low price is paid for eggs. Some eggs are worthless while others are worth much more than the average price. Insist that your dealer candle eggs during the summer. If he sorts out bad eggs he can then afford to pay more for the good.



## LAND CLEARING METHODS

Besides trying the char-pitting method there have been other plans, such as destroying by chemicals, dynamiting every stump, etc., but today the practical, common-sense method of eliminating the stumps is by the use of a good stump puller, combined with a judicious employment of powder to break up the big fellows and permit of pulling.

The last year or so have seen a wider and more intelligent use of stump pullers than ever before in the history of the country. In this period more land has been cleared, it has been cleared more satisfactorily and economically, and with less noise and excitement over the so-called "logged-off land" problem, than in any previous time. There is not a great problem so far as logged-off land is concerned. It is merely a question of a little labor, that pays better than most any other work the owner can undertake.

Granted that the stump puller is the most efficient eradicator of the stump, the next question is the stump puller itself—there are so many on the market. One of the oldest forms of stump puller is the horse machine, operating with a sweep. This particular form of machine has pulled multitudes of stumps, and has its advantages as well as its disadvantages. In the olden days the sweep would get away every now and then and break a leg either of horse or man. But latterly most of the objections have been overcome.

The tendency toward simplifying all sorts of farm implements has had its effect in stump pullers as well as in many other lines, and the newest and most satisfactory puller is a little hand machine that weighs only 171 pounds and, properly rigged, boasts more pulling power than any horse machine yet devised. This is the "K" hand power stump puller, introduced into the United States by Walter J. Fitzpatrick, 1926 Second avenue, Seattle. While it has been before the public only a brief period, it now is in use in virtually every state in the Union, in Alaska, and in Cuba and other islands of the West Indies.

This "K" machine operates with a pawl and ratchet, and with two blocks is capable of pulling 48 tons on a straight line. It has such power, in fact, as to break an inch steel cable, if the stump refuses to come. Yet it is so simple in operation that even a woman can operate it, and can outpull six large horses pulling in a straight line. The machine operates like rowing a boat. It has wheels that make it easy to move from place to place, and it can be turned to many valuable uses around a farm, as it is good for all sorts of pulling and hauling.

If the land to be cleared carries standing timber, the "K" is especially valuable, for the trees may be pulled clear of the ground. Stumps up to 22 inches in diameter in fir and four feet in cedar can be pulled direct by the "K"; when they are larger it is often best to break the stump and loosen it with a few sticks of powder.

## "K" HAND POWER Stump Puller ONE OF THE WONDERS OF THE AGE



CALIFORNIA EUCALYPTUS, 4 FEET IN DIAMETER, 18 FEET UP, PULLED WITH "K" IN FIFTEEN MINUTES, BY M. P. CONNERS, ON HIS CALIFORNIA RANCH.

The "K"

Hand-power Stump Puller will pull your stumps without any cutting or digging and without powder, if they can be pulled with an inch steel cable. This is guaranteed. One man will pull 48 tons. A woman can pull as much with two blocks on the machine as eight large horses can pull on a straight pull. This statement is guaranteed. Machine weighs 171 pounds. One man can pull four-foot cedar or two-foot green fir stump or three-foot green fir tree without any cutting or powder. This statement is guaranteed. Used by the United States government in Alaska and by numerous counties in Washington and other states. Write for special advertising offer and book on land clearing.

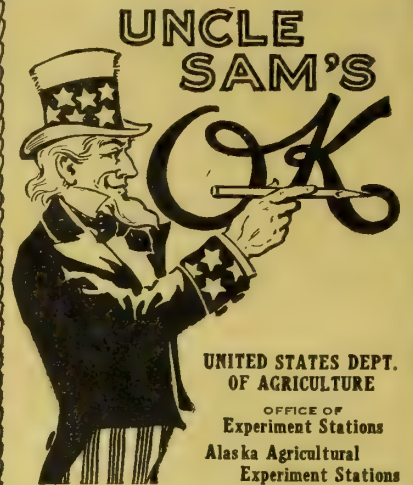
Address Box J.  
Walter J. Fitzpatrick  
1926 2nd Ave., Seattle, Wn.

"K" PULLING A BIG WASHINGTON CEDAR STUMP RIGHT OUT OF THE GROUND.



PULLING ONE OF STATE OF WASHINGTON'S GIANT FIR STUMPS.

NO CHAIN TO BREAK



UNITED STATES DEPT.  
OF AGRICULTURE  
OFFICE OF  
Experiment Stations  
Alaska Agricultural  
Experiment Stations

Sitka, Alaska, July 3, 1914.

Walter J. Fitzpatrick, Seattle, Wash.  
Dear Sir:—The Stump Puller has been received and put into action, and I find that it has all the power you represent it to have. Herewith find government voucher to pay for machine. Please mail receipt.  
PROF. C. C. GEORGESON,  
Special Agent in Charge of Alaska Investigations.

The big flat roots of the cedar come out clean and whole, while the deeper roots of the firs likewise come out entire and leave the ground in splendid shape for planting.

The "K" first was used in British Columbia, and then was introduced into Washington, Oregon and other parts of the northwest. It pulled the big stumps here so readily that there came a demand for it in the middle states and to the southward. The "K" has a fine record among the eucalyptus trees of California. A large field has been developed for it in the region of the great lakes, and there is a demand for the "K" machines in the Southern states, where there is much land clearing to do. The machine pulls out the oak, pine and other stumps of Georgia, Florida, Alabama and the rest of the Southern states with a facility that astonishes the operators.

More recently the United States department of agriculture in two of its

branches—the division of education and the agricultural experiment stations—purchased the "K" and found it so satisfactory and practical that Prof. C. C. Georgeson, director of the experimental work, has written Mr. Fitzpatrick a letter warmly commending the work of the powerful little machine.

The counties of Kitsap, Island, Pierce, Skagit and Skamania, in the State of Washington, are using the "K" hand power puller for the heavy road clearing work in place of the donkey engine and horse power stump puller. The commissioners of these counties found that three men to operate the horse power machine and the two horses necessary were too expensive. They also found that to get the horse power machines into position and to get a cleared space ready to work them took too much time. They found that the "K" hand power machine would work on land where you could not work a horse machine, and

that it had more power and could clear land for half the cost, as one man could do all the work, even moving the machine a mile or two himself.

## Raise Beef Cattle

1240 acres in John Day section of Eastern Oregon. All good land. Over half of it practically level; 500 acres can be put in wheat; balance fine bunch grass land. Fenced. Well watered by springs; water can be piped to buildings and some of the land irrigated. Good house, large new barn and outbuildings. Surrounded by thousands of acres of free range. This place will take care of 200 head cattle without using the outside range. On main county road, mail route and phone line; 4 miles from town. Price only \$10,000. (Practically \$8 per acre.) \$2500 cash, balance 10 years 6 per cent. If not personally interested, perhaps some of your friends would be glad to know of this opportunity.

Acme Realty Co.  
401 Equitable Building, Tacoma.



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., NOVEMBER, 1914

No. 11

## Two Yearly Silo Crops

A Practical Demonstration in Western Washington, by C. J. Zintheo.

A great many farmers have during the last two years, bought silos and a great many more are contemplating doing so next year. The question of what feed to use to fill the silo is now receiving attention. Any green succulent feed makes good silage, but corn is not only the best silage, but it also yields the greatest number of tons per acre.

The following story of corn silage is not a speculation of what might be done, but is a true narrative of what was done to raise a good crop of corn for the silo and it is given with the idea of helping those who are not familiar with raising corn for the silo that they might profit by the example.

Pickering Bros. at Issaquah, which is 14 miles out for Seattle, have a large dairy farm, and last winter, having no silage they bought \$2,500 worth of feed.

This year they were persuaded to put in sixteen acres of corn for the silos. They obtained, during early spring a sample of corn from a local seed house which they tested for germination by spreading some kernels between some damp cloth that was left in a warm place in the kitchen. At the end of a week they examined the kernels and found that only 50 per cent. of them had sprouted and

the balance were dead. If they had planted their field with this variety of corn they would have obtained only half a crop.

They then sent to a Portland seed house for three samples of corn which they tested in a similar way and this corn germinated ninety-five per cent.

The ground on which the corn was planted was sod ground on which a heavy coat of manure was put with the manure spreader. It was then plowed and gone over six times both ways with a disc harrow after which it was cultivated with a peg tooth smoothing harrow.

The King Phillip corn which has red kernels cost  $4\frac{1}{2}$  cents per pound. It was planted May 16, 1914, with a John Deere Edge Drop planter. These plates in the hopper having cells around the outer edge into which one kernel of corn only is placed on edge in each cell and as the plate revolves one kernel is dropped in each place 4 inches apart, 1 inch deep, the rows were 3 feet 6 inches apart.

The corn came up above ground six day after planting. Ten days after planting the ground was harrowed with a peg tooth harrow and the teeth slanted backward. This killed a lot of young weeds that had sprouted, but did not effect the corn which by this time was well rooted.

Two weeks after planting the field was cultivated with a two horse

Deere riding cultivator and this was repeated once a week until the corn was 2 feet tall, making six cultivations. Five weeks after planting the corn was hoed with hand hoes, in the drill rows between the stalks cutting out any weeds which the cultivator was not able to get.

At the last cultivation the hiller attachment was put on the cultivator and the corn was hilled as it was laid by less than two months from the time it was planted.

The corn was cut with a Corn Binder, September 14, making just 4 months from the time it was planted. The corn was an average of ten feet in height and produced an average of 20 ton of silage per acre. The ears were well formed and in the milky stage, but were not mature enough for picking. About five acres of this corn was planted. Five acres of white corn cob ensilage corn was planted. This received in general the same treatment as the King Phillip, except that the kernels were planted about 8 inches apart in the row. This corn produced heavier stalks and larger leaves than the King Phillip, and produced about 22 tons of ensilage per acre. The ears were more mature than the King Phillip and larger in size. Six acres of the Pride of the North corn was planted. This is a yellow dent corn and it received the same general treatment as to time of planting, preparation and cultivation of the ground as the other varieties, but the kernels were plant-

ed about 10 inches apart in the row. This corn produced stalks 15 feet tall (rather to much stalk), and yielded 25 tons of ensilage per acre; the ears were large and well proportioned, but not mature enough for seed. Considering that during the growing periods of 4 months there were 77 days of continuous drought, this growth of ensilage corn is remarkable and shows what can be done in Western Washington in raising feed for the silo.

The corn was cut and blown into the two 18x45 foot silos with an Ohio Ensilage cutter, run with a Caterpillar 35 H. P. engine. As soon as the corn was out of the field, it was plowed immediately with the Caterpillar tractor and a Deere engine plow and a crop of winter oats and spring vetch was put in, that will be ready for the silo next May and will serve as summer feed next July and August when pasture is short.

Suffice it to say that Pickering Bros. are not spending \$2,500 for feed this year but have green succulent feed for the cows all winter which produces about 20 per cent. more milk than dry feeding.

Our people in this country generally are thankful for the privilege of service, even of strife to make the world better and that we are not in the war zone to suffer physical torture.



Scene on the dairy farm of Pickering Bros., Issaquah, Wash., where corn ensilage, a pneumatic water system, electric lights and milking machines are reducing the total expense account by more than \$100 per month than without them, besides making the work easy and creating a product with a high condition of purity.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
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## FOOT AND MOUTH DISEASE.

Like a thunder crash out of a clear sky the foot and mouth disease spread has spread over the land. The fact is this malady has been in this country for a number of years past, confined mostly to isolated places. On account of extensive shipping it has begun to spread again for the fifth time. It was noticed in Chicago from where it was traced to some point in Michigan. At the National Dairy Show, a herd was infected and fearing it might spread among valuable registered cattle it was agreed by the dairymen and the authorities that the wisest and safest plan was to isolate the herds and quarantine the cattle for sufficient time to insure immunity. The same steps were taken at the stock yards, and several states in which it had been found also declared quarantine districts. The Pacific Coast states have specified quarantine stations for cattle which are shipped in from other states for the time being and stockmen generally concede this to be the safe rule, with the exception that if shipments are made from places where the disease does not exist, in disinfected cars, in such cases detention would seem unnecessary. With strenuous efforts to localize this malady there is no reason why it should not be under control in a short time. In Europe it occurs more frequently. It causes sores of the mouth and feet and occasionally on other parts of the body, and because of the tenderness of the mouth, animals eat very sparingly, and consequently lose heavily in flesh. Deaths which result are usually due to starvation. The cause of the disease is an organism which is so small that it has not been seen under the highest power microscope. The disease is transmitted from animal to animal with astonishing rapidity. Hogs are almost as susceptible as cattle, while sheep, dogs, cats and chickens, horses and even man may occasionally be affected, but with the human the trouble is generally so slight that it is not considered serious. Some of the stock men in Europe say the disease lasts but a short time and they feed soft mash while the mouths of the animals are

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

sore. Every reasonable effort should be made to control the disease in this country, and we hope the scare will not last long.

## TUBERCULOSIS AND MILK QUESTION.

For several years past Mr. W. J. Langdon, of Sumner, Wash., together with other leading dairymen, have tried strenuously to solve the problem of supplying milk to the city trade, which is safely free from bacillus and other impurities. It is generally conceded that compulsory testing for tuberculosis should be done under a state law and that the cost should be borne proportionately by the state, county or district, together with the dairymen, because if placed upon the shoulders of dairymen alone many of them will be compelled to go out of the milk supply business and, as has been the case in some of the cities east, the town people will have an insufficient supply. These efforts have been of little or no avail, and Mr. Langdon phrased the indifference on the part of the public as from a general viewpoint "that babies are cheaper than cows." He waited for an opportunity and when a city ordinance came up for passage in Tacoma, hurled this "fire-cracker" at the meeting composed of councilmen and a mixed audience of men and women. The result was like magic in serving the intended purpose to set the people thinking. The day following the daily papers devoted considerable space to discussions of the subject, even attempting to give opinions editorially. The tuberculin test for the control of tuberculosis at best is far from perfect, and as a matter of fact may be dangerous, for cows in the last stages of tuberculosis do not react and milk from them, supposed to be pure, might be seriously affected with the bacilli.

A pure bred herd near Portland, Oregon, worth a small fortune, was subjected to the tubercular test, reacted, was condemned and slaughtered. Post mortem examination revealed no tubercular infection. In other cases the test has proved a little better than 75 per cent reliable, which though far from perfect is at least a sort of guide for immunity and a purity standard. The dairymen as a body do not object to inspection of their herds and the test to determine the health, but insist that the burden

of cost should be at least in part a public and not entirely a private charge, or the dairymen, consumers and the general public will all realize as exemplified east, that the problem has not been solved.

Mr. Langdon, F. I. Mead, B. F. Shields and others who have given the pure milk question very careful consideration, are agreed that a solution of the problem is largely a matter of education. Dairymen are being taught practical sanitary methods and they will apply an improved system faster as they realize a little more profit from doing so. The cost of reaching the consumer is entirely too great. Municipal control of milk distribution in cities, as suggested by Mr. Shields in our July issue, seems essential unless the Sherman anti-trust law is modified.

## SPOKANE APPLE SHOW.

Fruit growers of the Pacific Northwest meet again November 16 to 24, at Spokane, in connection with the Seventh Annual Apple Show. Questions covering production, style of pack and storage are on the program. Some of the more important topics, such as uniform laws tending to definite standards of products and of inspection are also billed for discussion and should receive careful consideration. We are all realizing more and more each year the need of fixed standards both of products and of action expressed in the laws of the different states. We have come to a time when it becomes necessary to eliminate all the waste possible and to this end should have uniform, practical laws.

Just a little shortening up between producer and consumer also seems advisable, and the methods to be practically carried out must be well planned with a view of dealing fairly with every interest concerned in the production and business of handling the fruits. The ten million boxes of apples produced in the Pacific Coast states this season might have been sold in territory west of the Mississippi river at prices fair to producer, carrier, merchant and consumer with an improved distributing system designed to reach the country districts where there is purchasing capacity. The problem is to ascertain what such consumers can and will pay; then to

adjust the method of distribution on the basis of a fair margin of profit to the merchants and to the growers.

## SIRUP FROM APPLE CIDER.

Recently the Office of Information, U. S. Department of Agriculture, released a paper on "Discover Way to Make Fine Table Sirup From Apples." The patent applied for is in the interest of the public and is believed to be of value in utilizing undesirable or unmarketable apples.

The paper containing the information shows that the sirup is made from apple cider and that one gallon of sirup is obtained from every seven gallons of cider. In some respects the sirup is similar to cider sirup that was known to us twenty years ago. In other respects this sirup is similar to cider butter.

Inasmuch as the new process was designed chiefly for the cider mill or other manufacturer who desires to manufacture and sell cider sirup, the question immediately arose as to whether or not such a process would be feasible. From the home manufacturer's point of view the introduction of milk of lime (slaked lime suspended in water) did not appear practicable because it would be difficult to teach the average person the right amount of milk of lime to use. As outlined there is another objection in that the addition of water contained in the milk of lime dilutes the cider and consequently increases the time for the concentration of the cider to the proper consistency.

Taking these objectionable features into consideration, Professor Geo. Olsen of the State Experiment Station at Pullman, Wash., has modified the original process in such a manner as he believes to make it of practicable use to not only the cider mill but also to the housewife. Whatever changes have been made in the process it is hoped that it will not modify the patent in any way whatsoever. With this understanding, any one who desires to make sirup according to the modified method does so without infringing upon anyone's personal rights.

The modified process as worked out at the Washington State Experiment Station Chemical Laboratories differs from the U. S. Department method in that precipitated chalk (lime car-



A Prize Winning Exhibit at Western Washington Fair, Puyallup.



bonate) is used in place of milk of lime and an untreated boiled apple cider is used to render the chalk treated cider slightly acid.

The ample addition of milk of lime or precipitated chalk changes the coloring matter in apple cider to an inky color. Lime also tends to impart a chalky flavor. Its chief use, however, is to neutralize the malic acid in the cider and form what is known as calcium malate.

The difference in the use of milk of lime compared with precipitated chalk is in its limits of reaction. The milk of lime must be cautiously added so as to avoid an alkaline reaction, otherwise more cider will have to be added until the color of the liquid returns to an amber one. This moving from the alkaline to the slightly acid is not easily accomplished and in the hands of the average person may make a product varying more or less in flavor. On the other hand, precipitated chalk will react with the acid in the cider to form a neutral product (neither acid nor alkaline) and which is easily made slightly acid according to the following instructions:

For every 100 pounds of cider add ½ pound (ample in most cases) of precipitated chalk or enough more to make the treated cider take on a bluish to blackish color. Boil the cider for five to ten minutes and filter while hot. Collect the filtered material into open kettles or pans, add five pounds of boiled and filtered apple cider that has not been treated with lime carbonate. Boil again until the cider has reduced to one-seventh its original volume, then filter under pressure. The sirup formed is "distinctive" in flavor and appearance.

### CENTRAL COLD STORAGE PLANTS

Besides cold storage plants at the orchard, particularly where the fruit farm is of good size, the next desirable plan is to have a good cold storage plant at the local shipping station as now found at Wenatchee, North Yakima, Walla Walla, Hood River and some other points. Here apples and other fruit are being held back until glutted markets have been relieved and particularly during the month of November when the bulk of the apple crop is pushed forward into all available markets. This year of uncertainties fruit men are being sorely tried.

A further plan for reserve and storage, as suggested by W. H. Paulhamus, is the building of large cold storage plants at the export cities of Puget Sound, Portland and Spokane, where fruit could be shipped in lug boxes, and the fruit at once worked over, separating that which is not in good packing shape to be used for the cannery or evaporator.

With either the local warehouse, or combined with those at the large cities, warehouse receipts may be issued on which growers could realize a certain sum of money to finance operating expenses.

Under the plan where large canneries are located at the terminal shipping point it is possible to continue operating them at least six months of the year and fruits or vegetables shipped for canning purposes only, is hauled at a reduced rate.

Concerted action should be taken by municipalities, fruit growers associations and by transportation com-

panies to finance these large canning plants.

Organizations is positively necessary to handle the by products on a large scale and representatives of our commercial clubs, fruit growers associations and the carriers will do well to work out a feasible plan or to employ a thoroughly practical promoter who can engineer the undertaking.

### FRUIT FOR IDENTIFICATION.

New and valuable varieties of fruit, well adapted to Washington conditions, have been found in commercial orchards in various parts of the state, according to Professor O. M. Morris of the State Experiment Station at Pullman, Washington.

Apple and pear trees of unknown name exist in many orchards, and some of the strange fruits are excellent in quality. The best of these should be kept and propagated from. Orchardists having such trees are invited to send specimens of such fruits to the Horticultural Department of the State College of Washington and Experiment Station for identification. It is a waste of time to identify worthless fruits and these should not be sent.

Specimens sent for identification should be chosen to represent the average fruit of the tree in size, form, color and general appearance. The fruit should be sent carefully packed just as it comes from the tree. Do not polish it, nor pull out the stem or calyx. Pack with it a small twig in full leaf. Mark the package carefully, giving the name and address of the sender. Write a letter giving a brief description of the tree and date when the fruit is ripe, and also the approximate age of the tree.

A few seedling apples have been sent in and some of these will, no doubt, prove to be of great value to fruit growers of the future. So far as could be determined no seedling pear has been sent in, although two or three splendid ones have been found in the state. The apple orchards will be much better than they are now when they are composed largely of varieties that have originated in this climate and soil.

### WASHINGTON'S BEST SCHOOLBOY PTATO GROWER.

The interesting contest for awards, among the school children of Washington for industrial work, held in Tacoma last month, attracted many interested visitors to the Armory, where the products, and in some departments actual work, were exhibited. Mr. C. E. Flint, of Blaine, had charge of the fruit and vegetable department, and the products from all over the state were highly creditable, particularly the potato, beet and other root crops.

The prize potato grower proved to be Master Rock La Gasse, age 13, of Whatcom county. He had quality of product, described his practical method concisely and clearly, showing a profit margin highly satisfactory. His brief follows:

**Kind of Soil**—The required size plot of ground is a heavy clay loam which was planted to celery in 1913, then highly fertilized.

**Method**—May 1, 1914, plowed; May 5th, dug 7 trenches 6 inches deep; time, one hour, value 25c.

**Seed**—Variety Champion, 10 pounds cut to 3 and 4 eyes, value 25c.

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## WHEAT LAND

WHICH CAN BE BOUGHT ON EASY TERMS

American wheat farmers are responding nobly to the demand for breadstuffs from the European countries, already felt and sure to continue for several years. Wheat has gone over the dollar mark at local shipping points in the Northwest, and no telling how much higher it will go by another year, but no farmer believes it will be lower. It is a question of getting the land and raising the crop.

HERE IS AN OPPORTUNITY TO BUY

Over three sections, Nos. 17, 29 and 31, Township 15 North, Range 29 East, in Adams County, Washington, noted for its large wheat acreage, about three miles from Othello. Over half lies beautifully in a valley or draw, and is composed of rich volcanic ash soil; the balance is on a little higher elevation, with soil more of a sandy mixture. On the whole it is an excellent piece of wheat land; most of it could be plowed and seeded for a crop next year.

This will be sold at a very reasonable price and on long, easy terms, either in separate sections or as a whole. It is owned by a company and the title is perfect. For price, terms and further particulars, write or call, and mention this paper.

FORBES P. HASKELL, Jr.

Room 6, Gross Bldg., Tacoma, Wash.

**Fertilizer**—Cow manure; 4 wheelbarrow loads were applied in February, 1914.

**Time of Planting**—May 6, planted 16 pieces seed per row; total 112.

**Cultivating**—June 6, light hoeing, ½ hour; June 15, hoeing, ½ hour; July 2, light hilling up 4 inches, 1 hour.

**Harvesting**—Latter part of September, 2 hours.

**Result**—Marketable potatoes, 510 pounds, value \$10.20; unmarketable, \$0.03; total value, \$10.23; total cost, \$1.75; total net profit, \$8.48.

This first prize is one of the many examples, showing that the youth of Washington are learning how to apply their minds and hands co-operatively, thus laying a foundation for life's endeavor based on practical and intelligent methods. As incentive there is some measure of immediate reward for efforts put forth by the indus-

triously trained child as he proceeds, and far more than that he is made to see and feel the need of the training of his mind afforded through the general school curriculum. Let the good work of creating prize school boy potato growers proceed.

The parcel post egg cartons, made by the Pacific Fruit Package Company, Raymond, Wash., are giving excellent satisfaction. Samples are available on application.

### DRIED APPLE MARKET.

It is reported on good authority that buyers from Norway and Sweden are making contracts in the Eastern states for speedy delivery of choice dried apples. A year ago apple growers did not foresee this demand which is caused by the war. Heretofore the Scandinavians have depended largely on



Russia for dried apples. The fruit is taken in large quantities into the interior of both Norway and Sweden.

The agents came in contact with many dealers in evaporated apples, but they passed by that steamed and delicately tinted fruit. It was not the kind, that was all, and contracts are being made on the basis that the apples shall be of the homely quality which are familiar to farmer boys.

They must be apples in quarters or eighths, of a rich golden brown, such

as may be converted into apple butter or perchance into a delectable apple sauce. Apples with something of a tart flavor are preferred, and the children of the north insist that they shall retain the real flavor of the fruit. The news will cause busy fingers to pare the increase of the orchards, and the paring bees for that purpose are likely to be numerous for days to come. Several large dealers are reported to be aiding the Norsemen to obtain a full supply.

## THE PRUNING QUESTION CONCERNING BOTH NURSERYMEN AND FRUIT GROWERS

By Leigh Overman, Spokane, Wash.

The pruning question concerning both nurserymen and fruit growers is becoming more important each year. Today buyers of nursery stock are seeking more information on the subject than ever before.

To those who wish a good income from their orchards a knowledge of pruning is more and more essential every day. It is only just that a nurseryman should be able to give this instruction to the purchaser of his goods.

This is an age of science, and method must be applied to every line of business. Old ways of doing things are not accepted now. Pruning, as well and in order to do this the man who sells trees must have a practical as all other branches of the nursery business, must keep up with the times, knowledge of it.

We all know that pruning is important to the grower, because when properly done it increases the quality and quantity of his crop and lengthens the life of his orchard.

My customers are eager to learn more about pruning. They keenly appreciate the advantage of starting right, and realize that it is an investment which will mean income for the future. There are so many two-year-old trees (branch stock) sent out by nurseries that it is doubly important to shape them well during the first two years of their orchard life.

It is no credit to a nurseryman to sell stock that is not well proportioned. It is equally his duty to teach his customers that if they want a really good orchard, an orchard that will "deliver the goods," they must take special pains to keep the trees well shaped from the date of planting, and not wait until they have grown without attention for several years to prune them. As the work of the first two years in a child's school life lays the foundation for his future education, so the care given trees the first two or three years shapes their future.

There are multitudes of would-be pruners who have ruined and will ruin many hundreds of orchards which would produce the best results of properly treated. However, it is hard to find even two good pruners who agree as to method. This is naturally confusing to the average grower, but if each nurseryman will study the problem carefully, adopt some method that he knows has proven successful, and stick firmly to it, most planters will accept his advice and profit greatly by it.

As an illustration of the harm different methods applied to one orchard can do: I know of a large orchard which has been pruned for three years, during which time three men have had charge of it. The first man pruned it thoroughly according to his ideas, and left at the end of the year. The man who followed him said the orchard was ruined, but he'd bring it out all right! His method was almost the opposite, but he, too, left at the end of a year. Another man took charge and shook his head sadly at the destruction the second man had left in his wake. He pruned the trees the same way the first man had. Result: At the end of the third year, this orchard is no farther advanced than it was at the beginning of the first. All three of these men were experts, and if either of the methods had been carried out alone the orchard would now be in a high state of cultivation.

In the past many nurserymen have not given thought to this important part of orchard growing, but in the future each and every one of us should be more zealous in this branch of the work.

### PEAR BLIGHT.

Ira D. Cardiff, director Experiment Station, State College, Pullman, Wash., warns fruit growers whose orchards are affected with pear blight, against alleged cures which will not do the work claimed for them.

"The blight disease and its characteristics are well-known to plant pathologists and horticulturists the country over. Its cause is well-known and the methods of combatting it are well-known. There is, therefore, little excuse for making mistakes in regard to combatting this disease. The only way to cure a tree blight, once it is affected, is to cut out the infected portions. There is no patent cure," says Prof. Cardiff.

A satisfactory preventive seems not

yet to have been discovered, but that is no reason why continued efforts should not be made to find if possible some way to prevent it. A preventive measure when discovered is not likely to be expensive and should be amply proven before being offered for general use.

The article on another page of this issue by Horticulturist R. M. Winslow, on "Choosing Varieties of Apples for British Columbia," is of interest to all fruit growers in the Pacific Northwest states in the matter of adaptability of varieties. His discussion is very comprehensive, showing how heat units and length of season affect certain choice commercial varieties. When planting orchards it is very important to observe the pre-



The J. B. Pilkington Nursery, Portland, Oregon, is one of the busy firms supplying planters throughout the Northwest with ornamentals this season. They report a strong demand for evergreen shrubs, particularly the laurels, hollies, cypress, junipers and the small cedars of different varieties. Their catalog illustrating beautiful home grounds and plants is a most excellent guide for any who desire information on what to select and how to arrange for the most pleasing effects. Their booklet may be obtained on application by addressing

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cautions suggested as well as altitude and character of soil.

### TREE GROWING ALONG ROADSIDES.

The Horticultural Society at Battle Creek, Michigan, recommends the planting of fruit trees along the roadsides, as is now the practice in some thickly populated European countries. This plan is practical only in densely populated districts. On the Pacific Coast it will be many years before we are ready for that system, if ever. In commercial fruit districts we cannot afford to take chances with pest producing places. Some of the nut

trees might find utility in the roadside plan on this Coast.

### CLOVER SEED—SEEDING CORRECTION.

In a recent issue an article on Grass Seed for Pasture mixtures taken from the September Bulletin of Western Washington Experiment Station, Puyallup, two pounds alsike clover was given for wet land. Prof. E. B. Stockey calls attention to this error which corrected should read three pounds alsike clover in mixture for wet land. The moist land should also contain four pounds white clover in the seed mixture.



**STORE GOOD POTATOES**

The potato crop this year was not very large in Washington and there was, in some sections, more disease than in previous years. Professor O. M. Morris of the Agricultural Experiment Station at Pullman states that the indications are that many growers will lose heavily if they place many potatoes in storage.

The late blight was active in many fields and the potatoes grown therein are sure to keep poorly in storage. The potatoes may look sound and clean, but rot quickly when stored. There is no process of storage that will prevent this rot. The disease develops in the entire plant body and is established in the tubers before digging time. Late digging lets the potatoes rot in the field and there is less rot in storage.

The dry rot, also called root rot, infests the entire plant under ground. The potatoes may look sound, but be rotting under the skin at the stem end. There is nothing that can be done to check the progress of the disease in storage.

The only thing that can be done is

to select sound potatoes from clean fields. Dark spots in the flesh indicate the presence of some disease that will destroy the value of the potato.



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## CHOOSING VARIETIES OF APPLES FOR BRITISH COLUMBIA

By R. M. Winslow, Provincial Horticulturist for British Columbia.

Mr. President, and Members of the Pacific Coast Nurserymen's Association: Permit me to express for the Department of Agriculture, and for myself personally, our sincere appreciation of the honor we feel in having you meet in this Province. Of the great horticultural areas of the Pacific Coast, British Columbia has been the last to develop; our progress has, therefore been rapid, and we are pleased that it has, among a great many other things, been instrumental in bringing you here. It is a great pleasure to me, personally, to meet your members and to have the privilege of attending your sessions.

The commercial apple industry of British Columbia is a development of the last decade. The census of 1890 showed about 6,000 acres of fruit in the Province, and the census of 1900 showed an increase to only 8,000 acres. At the time of the 1910 census, however, the acreage had increased to 33,606, and the Provincial Government's Agricultural Survey of 1913 showed this further increased to 38,196 acres. The development was, therefore, a rapid one, following a period of inertia. The new development is largely in the Interior. In 1900, Interior districts had only about 1,000 acres and now have 30,000 acres; while in the Coast sections, in the same period, the acreage has increased only about 1,000 acres. In fact, the seat of industry was almost entirely changed, for our Interior districts are as different from the Coast sections as is the case in Washington.

The great demand for information on varieties of apples to plant came largely, therefore, from these new interior areas, which were almost entirely lacking in old apple orchards; even further, the Interior sections, looking to the Canadian Prairies for their markets, were without information as to what those markets desired. The situation has, therefore, thrown a great responsibility on the Provincial Government's Department of Agriculture, which had been active in promoting the fruit industry and was then called on for technical information on varieties and on cultural methods.

A great deal of the planting had already been done when I came to the Province as Provincial Horticulturist in the spring of 1909, but there was still a very large demand for information and the demand continued strong until two years ago. With so little local information to draw upon, it was necessary, under the circumstances, to secure the most reliable information from other districts of similar character. We were fortunate in having weather records for considerable periods for typical points in many of our new districts, and with these in hand, we set out to compare climatic conditions with already successful fruit districts.

Comparisons of climate, as to precipitation, are simple, but as to temperatures the matter is hedged with difficulties. In this respect we found the method of utilizing temperature records worked out by the U. S. Biological Survey of the greatest value. Their investigations show the marked relation between the character of the growth period and the vegetation. Knowing that all the principal commercial varieties of apples had distinct climatic preferences, the problem was to determine what they were.

The most important temperature conditions influencing the success of any variety of apples are as follows:

1. **The length of the growing season and temperature.** While this is usually gauged from the length of season between killing frosts, the more exact way is to determine the period during which the mean temperature is over 43° F. This period for Hood River, for instance, averages 240 days, from March 17th to November 12th; and for Vancouver, B. C., it is 230 days, from March 25th to November 12th. The growing season in the various Agricultural districts of B. C. is usually between 175 and 240 days.

2. **Number of heat units.** The amount of warmth, as well as the length of the growing season is also important. The sum total of heat during the season is expressed in heat units, and a heat unit is taken to be 1° F. for one day for

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There are three plants which should be in every farm home yard in the Coast section, as they always afford a high measure of satisfaction.

**Berry-bearing Holly**, with red berries; **Lauristenus**, an evergreen with beautiful small white flowers, in bud and bloom during the winter months, and the **English Laurel**, the evergreen with large broad green leaves. No garden is complete without this trio.

**Roses**—Three beautiful new ones, **Jonkheer L. Mock** (pink) won gold medal in Europe; **Rayon D'Orr** (yellow) and **Sunburst** (deep yellow, orange center), all hardy.

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each day of the growing season. In this way, the total heat units for the growing season are determined. Hood River has an average of 15,315 heat units; Vancouver, B. C., has 12,667. The total heat units vary widely in B. C. horticultural districts, but are usually between 10,000 and 13,000.

3. **The hottest six weeks.** Also important is the average temperature at the height of the growing season. Where the average temperature for the hottest six weeks is below 62° F. Sweet Corn and tomatoes are ripened with difficulty; where the temperature averages 66° F. for the same period, these same crops are grown in large commercial areas.

Having collected such data for all the principal apple growing areas on the continent, but especially those of the Pacific Northwest, we set to determine the range of particular varieties, especially the Yellow Newton, Spitzenberg, Winesap, Jonathan, Wagener, McIntosh and Northern Spy, which varieties seem to suit our markets and are among the most popular of boxed apples.

The Yellow Newtown is notably a variety of limited adaptabilities. We found that Hood River, Rogue River, and the Albemarle country of West Virginia, in which areas this variety reaches its greatest perfection, have a growing season of 240 to 270 days, with a total number of heat units of from 13,750 to 15,700, and a temperature over the 6 hottest weeks of 67° F. to 70.7° F., all of these, furthermore, are humid areas. The districts with most nearly similar conditions to British Columbia are still very far from having the same conditions. We, therefore, counselled against heavy plantings of Yellow Newtown, and actual experience has since confirmed our opinion.

A similar investigation of the Spitzenberg, and other notably sectional varieties, showed that it required somewhat similar climatic conditions, save that it is doing well in some Western irrigated districts with similar temperatures. In districts such as Spokane, with 216 growing days, 12,620 heat units, and a temperature for the six hottest weeks of 68.6° F., the trees are not so productive, the fruit is not so large, nor well colored, nor of such high quality. Our principal Interior districts, which have temperatures much like that of Spokane, are finding similar results and these results have justified our expectations.

The common or old Winesap is one of the most popular of Western apples and has been widely favored in B. C. on that account. We found, however, that it apparently requires a growing season of around 225 days, a total of not less than 13,400 heat units, and temperatures for the six hottest weeks of 70° to 72° F. With shorter or cooler seasons, the fruit lacks in size, color and quality.

The most favorable recorded points in this Province, such as Lower Okanagan Lake, with a growing season of about 203 days, heat units 11,775, and six hottest weeks' temperature of 67.3° F., are obviously lacking. The Kamloops district is much more nearly suitable, having an average of 214 growing days, 12,683 heat units, and six hottest weeks' temperature of 69.3° F. The Similkameen Valley, of which, unfortunately, we have no temperature records, but which is believed to have the longest and hottest growing season in the Province, comes even nearer than Kamloops to meeting the requirements. We have accordingly advised fruit growers to avoid the Winesap, except for these hottest localities. In the last two years the Winesaps produced in various districts have borne out our expectations, and I believe that in the most favored



districts mentioned the variety will succeed commercially. On our recommendations these districts have planted largely of it, and other districts have largely avoided it.

The Jonathan is another variety, which we find succeeding best in districts with long and warm growing seasons, with high temperatures during the hottest six weeks, and usually on the Pacific Coast, under irrigation. Jonathan we found, however, to do well, and sometimes very well in districts apparently not nearly so well suited as the most favored ones. In our own Okanogan Valley, where such points as Kelowna have a growing season of 201 days, 11,517 heat units, and a temperature for the six hottest weeks of 66° F., the Jonathan is bearing heavily and producing fruit of high color and excellent dessert quality. Because of the rather shorted season, the keeping quality is much improved, giving us a season up to the end of January under ordinary storage. In cool seasons, however, even in our most favored sections, the Jonathan may be below grade in both quality and appearance. On the whole, our Jonathans would be largely confined to the Okanogan, Thompson River, Similkameen, and Kettle River districts, and preferably in warm locations and in good deep soils.

The Wagener has been much favored for planting in the Interior of the Province, largely because of early bearing and productiveness. Wagener requires apparently just about the very conditions found largely through our Interior sections. It is the most largely planted variety in the Interior next to Jonathan. In the cooler and less sunny districts, it is not doing as well as in more favored ones. Water Core has given considerable difficulty, and its control by cultural methods is not yet attained. It seems well suited to the dry belt areas in which the Jonathan is succeeding and, I think will justify the large plantings which have been made.

The McIntosh Red is not so well known south of the line as in British Columbia. It is, as you know, of Canadian origin, though a very popular apple now in Vermont and in the Bitter Root Valley, Montana. In its native home it thrives excellently with a growing season of 190 days, with 11,052 heat units, and a temperature for the six hottest weeks of 68.2° F., and in the Bitter Root Valley with a slightly longer season, 11,600 heat units and a six hottest weeks' temperature of 65.8° F. We find these conditions very closely duplicated in both the irrigated and nonirrigated fruit districts of the Interior. No other well known variety seems to be so admirably adapted in this respect as the McIntosh. I am pleased to say that this variety has strongly justified our recommendations for it and may yet become our premier apple.

Similar studies made with a large range of varieties have given us must valuable suggestions and we feel inclined to lay even more stress than before on temperature requirements, as our previous conclusions have become justified by experience.

The great unsolved problem in B. A. apple culture is to find a suitable long-keeping apple. The tree must be hardy, vigorous and productive; the fruit must be of medium or larger sizes, red, of high dessert quality, and of long-keeping quality. We have not yet found all these requirements in one single variety. It is true that the same problem faces apple culture throughout Canada. In the search for this variety we have examined the requirements of practically every variety grown on the continent, and are even now testing a number of varieties grown successfully in Great Britain and Australia. The successful search for the desired variety will mean millions of dollars to Canadian fruit growers. There is still much room for improvement in varieties.

## AGRICULTURE

## The Basis of Prosperity

### Government Doings for Farmers

From an Address by the Secretary of Agriculture Before the National Dairy Show Association, Chicago, Illinois, Monday, October 26, 1914.

Within the year Congress has enacted the Smith-Lever Extension Bill, which, in my judgment, is one of the most significant educational measures ever adopted by any government. It recognizes a new class of pupils—a class composed of men and women working at their daily tasks on the farm. The Government takes the adult farmer and farm woman, as well as the farm boy and girl, as its pupils. It provides for an expenditure of over eight millions of dollars, partly by the States. It incorporates the most efficient method of conveying information to the farmer, and through the healthful process of co-operation between the State and the nation, places the brains of these two great agencies at his disposal, insures efficiency, and eliminates waste and friction. I yield to no man my

appreciation and value of scientific investigation and research, but I am convinced that the great task confronting us now for the betterment of agriculture is to bring to the average farmer what the experts and the best farmers know and to induce them to apply it. If we could secure this we should revolutionize agriculture; and this is the object of the Smith-Lever Bill. It aims to reach the farmer by personal contact, and above all, to bring assistance to the farm woman who has been too long neglected as a factor in agricultural life of the nation.

#### Marketing Undertakings.

But vital as are these problems of production, even more urgent are the problems of marketing and distribution. It has become clear to students of agriculture that further production in many directions waits on better distribution, and that in this field fundamental problems of justice and injustice are involved which demand solution. The time has come to conceive agriculture in all its

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(References—All express companies.)

**STRAWBERRY PLANTS** — Clarke's Seedling at lowest wholesale price. State quantity wanted. W. LEHMAN, White Salmon, Wash.

**RED AND ALSIKE CLOVER SEED**—Direct from the section where grown, at lowest price. Address Rhoten Farm, Salem, Oregon.

relations, to conceive it as a unit and not to attend to merely one or a few of its phases. The Government has been quick to see these things. Urgent problems have been pressing upon it for solution, problems of marketing, of distribution, of good roads, of rural finance and of rural sanitation and health, and the Department of Agriculture has rapidly tended to become, as it should, a great Department of rural economics and of rural life. The Congress now sitting has appropriated two hundred thousand dollars for the study of marketing, passed the Cotton Futures Act, made increased provision for the in-

## IT PAYS TO HAVE SHADE TREES

If a real estate dealer tells you that the house or building lot you are thinking of buying is worth several hundred dollars more because it is well supplied with shade trees, don't be too sure that he is trying to take advantage of you until you have counted and measured the trees. Very probably he may be telling the truth, for it has lately been discovered that the right kind of trees do increase the value of a piece of real estate.

In order to determine the value of trees in residential districts the Massachusetts Forestry Association recently sought the advice of a number of practical real estate men. These men were asked this question: "How much, in your judgment, do full grown shade trees along the street improve the value of the adjoining land for house lots?"

The majority of answers ranged from 10 to 50 per cent., while some went so far as to state that a house lot would be worth 100 per cent. more if full grown shade trees were standing in front of it. A fair average of the answers held that trees would improve the value of the adjoining land 40 per cent.

Expert tree appraisers say that a shade tree in good condition and well placed is worth \$1 per square inch of cross-section measured at breast height. At that rate, a tree one foot in diameter is worth \$113, while a tree two feet in diameter is worth \$453.

For the sake of illustration, suppose that we take a good sized house lot, 50x100, or 5000 square feet, worth 25 cents a foot. The land value is \$1250. If the trees are spaced 50 feet apart on the street there would be one tree in front of the property. The tree is two feet in diameter and worth \$452, which would increase the value of the lot 36 per cent.

The above news item which appeared in Spokesman-Review confirms what every tree planter has so long known, and is proof positive of the argument we have presented so often.

We have this season, an unusually fine lot of all the staple deciduous shade trees adaptable to western conditions, such as American Elm, Soft Maple, Norway Maple, Sycamore Maple, Ash, Beech, Birch, Catalpa, etc., besides the exceedingly rapid growing trees such as Carolina Poplar and Black Locust for the dry hot regions where quick shade is so much desired.

In shrubbery we have a fine assortment of the choicest varieties in Althea, Barberry, Calycanthus, Current, Forsythia, Honeysuckle, Jap Quince, Jasmine, Spirea, Syringa, etc., besides a full assortment of all the odd favorite roses, and a large number of the new proven sorts. Send for our catalog or let our salesman show you our list when he calls.

Stock all grown on clean new volcanic ash soil and is well rooted, hardy and fully matured. Transportation charges prepaid to destination on any purchases.

**WASHINGTON NURSERY COMPANY**  
Toppenish, Wash.

Salesmen wanted.

vestigation and promotion of good roads, and has pushed nearly to the point of completion measures for the standardization of grain and for the supervision of its sale in interstate commerce, for the standardization of cotton and for a permissive warehouse system for the leading staple crops. The Office of Markets, although only recently created and necessarily requiring time for the consideration of its projects and especially for the securing of an efficient staff of experts,



has conducted investigations in a great variety of directions, furnishing much information to those seeking it; and it will at no distant day extend aid through bulletins and as rapidly as possible through demonstration. It is investigating the proper methods of grading and standardization, packing and shipping, the marketing of special products, transportation and storage problems, city marketing and distribution, including farmers' municipal wholesale and retail market houses, the direct dealings between producers and consumers, and cooperative production and handling of products. It is giving special attention to such details as docking in the sale of grains, and to the methods and practices of large terminal markets in the practice of mixing. The object is to do justice as between producer and consumer, to guarantee that the producer shall get a just price for the specific product which he offers for sale, and to the consumer that he shall get the specific product for which he pays his price, that normal and orderly processes shall prevail in the distribution of farm products, and that there shall be added incentive to the farmer to increase in the fullest measure not only the quantity but the quality of his product.

#### The Road Problem.

It is estimated that it costs twenty-three cents per ton to haul a mile under existing conditions on the country road, and that this could be reduced by half if the roads were improved. The question is one partly, of course, of means or funds, but even more largely of methods, of instrumentalities, and of administration. The nation today is spending annually the equivalent of more than two hundred millions of dollars for roads, an enormous increase in the last decade. Much of this is directed by local supervisors and it is estimated by experts that of the amount so directed anywhere from thirty to forty per cent is, relatively speaking, wasted or misdirected. The first requisite, therefore, is for efficient expenditure and administration, and so far as the Federal Government is concerned, to project it into the situation so as to safeguard the expenditure and to perfect the administration. The Office of Public Roads is at present doing everything in its power to promote the economical building of good roads, and especially to assist in the development of proper administration. The difficulties are presented mainly in the sphere of State and local administration. Less than half the States at present have an expert highway commission, and none have expert county commissioners. If direct Federal aid is to be extended it should be done only under such conditions as will guarantee a dollar's result for every dollar of expenditure. It is clearly undesirable to discourage State and local initiative. Cooperation between the State and the Federal government is requisite. The State should be the lowest unit with which the Federal agency should deal, and the representative in every State should be an expert highway commission. An automatic check to assaults on the Federal treasury should be provided, and the requirement that each State makes available at least twice as much as is appropriated by the Federal government should be imposed. If there were the further provision that the Federal funds should be limited to construction projects and that before

Federal money is made available for any projects, those projects shall have been mutually agreed upon by the Federal agency and the State Highway Commission, with clear understanding as to methods of construction, specifications, materials, and development of a State system, great benefits might result and dangers would be reduced to a minimum. This same principle of cooperation is embodied in the Smith-Lever Extension Bill; and, in my own opinion, in intelligent cooperation of this sort many of the problems which are presented by our dual form of Government will find solution.

#### Cooperation and Credit

It is objected by some that such injection of the Federal Government in the administration, in some way, involves an invasion of State autonomy. If there is danger here, the easiest way for a State to obviate it is by not seeking Federal funds, but if people do demand Federal money they cannot easily decline to have its proper and efficient expenditure safeguarded, and surely the people of the nation have a right to the best knowledge and service of the thoughts of all their governmental jurisdiction. All these exist for the people, and all should have, if they have not, the sole and exclusive desire to serve the people. Such are the lines along which the present government is seeking to solve this vital problem.

The Government recognizes as well the broader aspects of rural life. It knows that the genius for organization which has done so much for industry in the nation can be brought to prevail in the sphere of rural life and of agriculture. Extreme individualism in agriculture has had its day. There can be no question that the key to the solution of many of the problems of rural life will be found in some form of concerted action or of cooperation. Some form of organization is as inevitable as it is desirable. Without it the farmer cannot have adequate schools or social life; without it he cannot secure good roads; standardize his products or economically market them; without it he cannot have the proper health facilities or lay the credit foundations which will enable him to secure capital at more reasonable rates. The Congress has recently given concrete expression of its appreciation of these phases of rural life by placing at the disposal of the Department of Agriculture the fund for the study of cooperation, and not only as it affects marketing, but also as it affects other phases of rural activities and especially as it affects rural credits. In addition to recognizing, as to the President expresses it; that the farmer "is the servant of the seasons," and that therefore, not as a matter of discrimination but as a matter of equal justice, peculiar consideration should be had for his circumstances and of his credit needs, by providing in the Federal Reserve Act, for a longer period of maturity for farmers' loans and for loans on farm mortgages by national banks within certain limits, Congress has spent many weeks maturing a measure for the Creation of land mortgage banks and the Department of Agriculture has made a special study of cooperative credit associations for the small farmer. There is every reason to hope that in the near future valuable and helpful action will be taken in these two directions.

#### Equalizing Some Rural Burdens.

Nothing short of a successful at-

## LIME YOUR SOIL

The same work, the same investment in time and money on limed soil will double your crops and the best form of lime to use is

# FERTILIME

TRADE MARK

Because it is lime in the most concentrated form, specially prepared for agricultural purposes and will give immediate results. Mixed with other fertilizers or manures, the effect on soil and crop is wonderful. Contains over 70% Calcium Oxide.

Send sample of your soil. Write for prices and Lime Bulletin.

**F. T. CROWE & CO.**

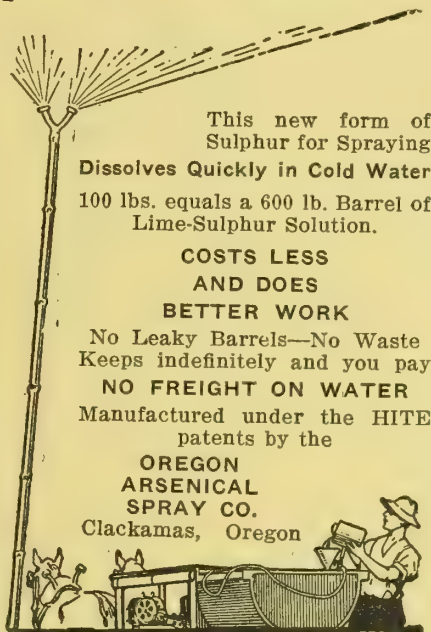
Seattle, Tacoma, Portland

**GROUND LIMESTONE** Greatly Reduced Prices  
on carload lots delivered  
to your railroad depot

**For Scale, Insects and All Fungus Diseases**  
that can be Controlled in the Dormant Season Use

Diamond Soluble  
**SPRA-SULPHUR**

Active Ingredients more than  
58% Soluble Sulphur



#### Get the Spray Booklet

It contains much information of value, covering the use of various sprays, general data as to spraying and prices on sprays.

#### FERTILIZE NOW

Put your fertilizer problems up to us. Diamond Quality Fertilizers are complete fertilizers of the highest grade. Bone meal and tankage form the base to which is added the necessary potash, nitrogen and phosphoric acid. We prepare a specific fertilizer for each purpose.

**FREE FERTILIZER BOOKLET** listing and giving complete analysis of various fertilizers, together with much good information on fertilizing, sent **FREE**. Ask for catalog 55.

**Portland Seed Co. PORTLAND, ORE.**

**The Spray Pump for  
The Pump Wise**

**GOULDS  
SPRAY PUMPS**

Pumps that you buy to last for years—guaranteed by a manufacturer of fifty years of standing—to do their work year after year in an entirely satisfactory manner.

**"How to Spray  
When to Spray  
Which Sprayer  
to Use"**

A valuable free booklet, containing spray catalog, formulae and much information on sprays and spraying.

#### OUR COMPLETE CATALOG

Lists Gould Pumps, pruning tools, sprays and tells about many things of interest to growers. Sent free. Ask for Catalog 54.

**20** Reasons Why You Should Investigate the **SANDOW** Kerosene Stationary ENGINE

it runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices—based on enormous put-put-30 day money-back trial—10 years iron-lad guarantee. Sizes, 1 1/2 to 18 horsepower. Send a postal today for free catalog which tells how Sandow will be useful to you. No go-betweens. Pocket agents' and middlemen's commissions by dealing direct with factory. (602)

Detroit Motor Car Supply Co.  
600 Canton Ave., Detroit, Mich.

## FINE GOAT RANCH

800 acres of good land. Over half of it can be plowed when cleared. Balance fine pasture. Watered by creeks and springs. Located on the Northern Pacific Railway between Portland and Tacoma. Price \$15 per acre. Good terms. The best proposition for a goat ranch in Western Washington, subsequently to become a dairy farm. This opportunity merits careful consideration by any prospective stock farmer.

**ACME REALTY COMPANY**  
401 Equitable Building, Tacoma.



tempt to secure these larger results in the rural life of the nation, to organize it, to make it profitable, healthful, comfortable, and attractive, can satisfy any thoughtful and patriotic man. It is the only sure way of developing and retaining in the rural districts of the nation an adequate number of efficient and contented people. That the thought and action of the nation must be along these lines is made clear by the facts I have recited and by the further fact that while the population of the nation in the last 15 years has increased 23 millions, the strictly rural districts have shown an increase of less than 6 millions. We cannot neglect the higher things to which the material minister and which if secured would render much of our other effort unnecessary. The greatest undeveloped resource of any community is its people, and if we devoted more attention to the conservation and development of the people we should be relieved of much of our concern for the conservation and development of our natural resources. An awakening of the mental and spiritual faculties is prerequisite to the success of any educational enterprise, and therefore along with our attempts directly to increase the production of material things, we must minister to the minds and spirits of the rural population. In short, we must see to it that the finer results and the higher things of civilization are not the peculiar possession of urban peoples,—that they do not pass by or over our struggling rural masses. We must see to it that there is within reach of every country boy and girl an opportunity for a sound elementary and secondary school training, that the rural family be protected in its health against the ravages of insects and of disease; that the load be lifted in some measure from the struggling women of the farm, and that the wholesome social attractions of life be made more freely to abound. Any expenditure of effort or money in

this direction will not be a burden but an investment, and with such protection, the farmers of this nation need not fear the competition of the world and the nation need not fear for its permanency.

#### WHEAT SALE LARGEST IN NORTHWEST

What is said to be the largest wheat sale ever made in the Northwest by one individual farmer was consummated last month when the Jones-Scott Company of Tacoma issued a single check to George Drumheller of Walla Walla for \$228,375 in payment of 225,000 bushels of wheat, mostly club, at \$1.02½ f. o. b. loading point.

The Jones-Scott firm has bought Drumheller's wheat for years. Last year a check amounted to \$180,000. The total purchases of the firm this season total about 500,000 bushels. A large part of this, it is said, probably will go to the European war zone.

Sales at Walla Walla in one week amounted to more than 500,000 bushels, included in which are the Drumheller holdings stored at various warehouses all over the county.

The avalanche of wheat at Walla Walla recently was due to the offering by dealers of \$1 net for the club variety, or \$1.01½ f. o. b. Following some big buys, however, they withdrew from the market.

Exports of grain from the Northwest this season promise to be record breaking. The shipments began early and the chartering for the foreign trade has continued heavy.

Wheat continues to pour into Tacoma and Seattle in considerable quantity. Much of this will be ground up into flour, but thousands of bushels will find their way to feed the hungry mouths on the Continent, being shipped as fast as vessels to handle it becomes available.

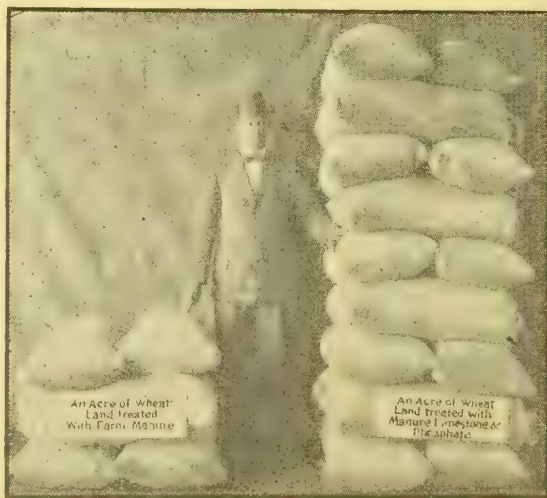
### BREAD FROM STONES

Ground Phosphate Rock and Lime Stone with Other Fertilizers.

In Circular Bulletin No. 168 entitled "Bread from Stones," sent out by the University Experiment Station, Urbana, Ills., by Cyril G. Hopkins, he explains how a 40-acre tract of land, depleted in fertility had been brought back to good cropping condition, by growing clover, then applying manure, and ground limestone and some fine-ground raw rock phosphate. The surprising result was obtained where the ground phosphate was applied in connection with other fertilizers. Where the barnyard compost a lime rock was applied there was a yield of 15 bushels wheat per acre and where the phosphate was applied in connection with the other fertilizers, the yield was 35½ bushels per acre. About 2 tons per acre of the phosphate had been applied during 10 years or about 400 pounds per acre a year.

The illustration shows the increased yield where both the lime and phos-

phate had been applied compared with the yield from an equal amount of



ground fertilized with farm manure only. This is not an argument against the use of the farmyard compost, but is a carefully conducted demonstration showing how much its efficacy is increased by applying in connection the limestone and the ground phosphate, in reality is producing "bread from stones." The Pennsylvania Experiment Station has verified the demonstration, as have also the stations

## Get H-L-F Price on double wall house

The picture shows the new H-L-F patent Stud and Wall Board Construction

25 to 50% cheaper than back plaster and better. Means a warm house in winter, cool in summer. Write for prices and full particulars.



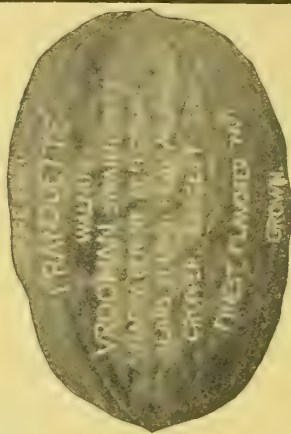
### Write for H-L-F House Pricer

Get delivered, freight paid price on materials for the house you've been planning. Write today even if you don't expect to build for some time to come.

#### H-L-F Lumber prices very low

We control forests and mills—sell you direct—give you better lumber at big saving. Count, grades, satisfaction guaranteed. Good ideas on plans in H-L-F Prize Plan Book, 10c; H-L-F Barn Builder's Guide, 4c. Write for price on H-L-F Silo (double wall, freeze proof.) Also send for H-L-F Millwork Catalog.

**Hewitt-Lea-Funk Co.** 493 Crary Bldg. Seattle, Wash.  
Capital \$1,000,000 Not in any Trust or Combine



### Have You Read This?

"At my home on Nob Hill, I have two Walnut trees which I purchased from your Company. They are now thirteen years old; were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from those two trees last fall. My grocer pronounced them superior in size and flavor to California nuts."

E. W. Brackett, North Yakima. Space here forbids much explanation, but if you will write us, we will gladly explain the difference between the famous VROOMAN PURE STRAIN FRANQUETTE WALNUT and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc., in the West. ORENCO trees are planted from coast to coast because they are known to be always—dependable—first class.

FILBERTS — Good plants of such leading varieties as Barcelona and du Chilly.

#### OREGON NURSERY CO.

Orengo, Oregon

Competent salesmen wanted.

## Nursery Stock

### FRUIT TREES

#### SMALL FRUITS

#### ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

**SALEM NURSERY COMPANY**

F. J. Rupert, Mgr.

SALEM

OREGON

### 1000 ACRE RANCH

#### \$15 Per ACRE

1000 acres of fine land in Eastern Oregon, 8 miles from good town and railroad; 75 acres can be put in alfalfa and irrigated from nice creek that runs through the place and furnishes abundance of water the year around; 400 acres good wheat land; balance of place fine bunch grass pasture. House, barn and outbuildings. Orchard. Price only \$15 per acre. Good terms. A splendid opportunity to go into the hog, cattle and wheat business. Write us if you are looking for a ranch of any kind.

#### ACME REALTY COMPANY

401 Equitable Building  
Tacoma, Wash.

### FRUIT GROWERS

Any reader desiring trees for this planting season will do well to get our list and price on some 3-year rooted and 1-year top apple trees, strictly first class, in leading varieties.

The stock being on ground with lease expiring this season, must be sold and it will pay intending planters to investigate. Write at once.

**ROEBER BROTHERS NURSERY**  
R. F. D. 2, Beaverton, Oregon.

## VETCH SEED

We make a specialty of vetch seed and you will find our prices the very lowest.

### CLOVER SEED

We are located in the best clover producing country in the U. S. and buy the very best lots for our own use.

When you are in need of vetch, clover or any kind of seeds, write us for prices. You will always find our prices the lowest.

**D. A. WHITE & SONS**  
SEEDSMEN  
Salem, Oregon

## Small Fruit Plants

at

### Wholesale Prices

Blackberries Gooseberries  
Raspberries Currants  
Loganberries Dewberries  
Strawberries Rhubarb  
Asparagus

Write for prices.

**F. H. Burglehaus**  
SUMNER, WASH.

#### FARMS WANTED

Wanted to hear from owner of good farm or unimproved land for sale. Send description.

**NORTHWEST BUSINESS AGENCY**  
Minneapolis, Minn.



in Maryland and Ohio, where the increase of yield by means of the added phosphate was from 500 to 1000 per cent. The ground phosphate is now put on the market by the United States Phosphate Co., Salt Lake City, Utah, where it is mined and finely ground. Complete information regarding its use and application to the different soils may be obtained by addressing this company.

#### POISONOUS PLANTS ON RANGES

##### Principal Varieties Causing Heavy Losses to Stockmen.

Six of the poisonous plants that cause the heaviest losses of live stock on western ranges are described with the aid of full-page photographs in a circular just published by the United States Department of Agriculture under the title, "Principal Poisonous Plants of the Western Stock Ranges."

Despite the damage that these plants do every year there are many stockmen who do not recognize them and in consequence are unable to protect their stock effectively from being poisoned by them. It is probable that there are on the ranges a large number of poisonous plants but the heaviest losses are those produced by the plants named in the circular. These are the zygadenus, or death camas, the lupine, the rattleweed or white loco, one of the worst of the many varieties of loco plants, the tall larkspur, the low larkspur and the cicuta or water hemlock. Of these cicuta alone is dangerous to man, causing violent convulsions and even death. The root of it, however, is the only poisonous part. In the case of the other plants, with the exception of the lupine, all parts are poisonous to stock. Both the tall and the low larkspur lose their poisonous qualities after blossoming.

The illustrations in the circular are accompanied by brief descriptions of the plant which should enable the stockman to identify them readily. The symptoms peculiar to each form of poisoning and the remedy, when there is one, are also set forth.

#### FALL PLOWING.

Fall plowing possesses many advantages in the greater part of the agricultural area of Washington.

(1) Fall plowed land left rough will absorb the winter's precipitation much more completely than a firm surface. This advantage is very important except in some of the regions of heavy rainfall in Western Washington.

(2) The winter's rain and snow will settle the furrows, shutting out excessive air space, and restoring capillary connection with the soil beneath. This puts the soil in better shape for rapid and extensive root development and greatly lessens the danger of the furrows drying out if much manure, stubble or other refuse has been plowed under. This settling of the furrows, accomplished by nature, is more effective and costs less than the firming of spring plowing done with compacting tools.

(3) The weathering of the loosened furrows improves the physical condition of heavy soils and aids in the liberation of latent plant food. The immediate yielding power of a given piece of land is not determined by the amount of plant food actually stored in the soil, but by the amount of plant food that can be made available to the immediate crop. One of the leading purposes of tillage is to encourage

the development of available plant food in the soil.

(4) In the hilly sections land plowed on contour lines in the fall and left rough is less apt to wash and gully than the same soil left with a firm surface. This is becoming an important consideration in the grain belt in most cases.

(5) Fall plowing economizes time and labor by utilizing teams and equipment that would otherwise be idle, and relieves the usual congestion of spring work. This usually gives time for better soil preparation in the spring. In most cases it is probably better not to fall plow land that is to be summer fallowed, but instead disc the surface. Discing in the fall will give the benefits of fall plowing in a minor degree. Summer fallow land is usually apt to become too compact by the spring after seeding if it is plowed the fall before summer fallowing. It is also usually best not to fall plow a leachy soil in a wet climate.

In general, however, it is usually desirable to fall plow for spring crops in most parts of Washington except where the spring seeding is done on summer fallow. We would urge those who have not practiced fall plowing for spring crops to give the practice a small trial this fall. Land may be given a deeper plowing in fall than in spring with good results.

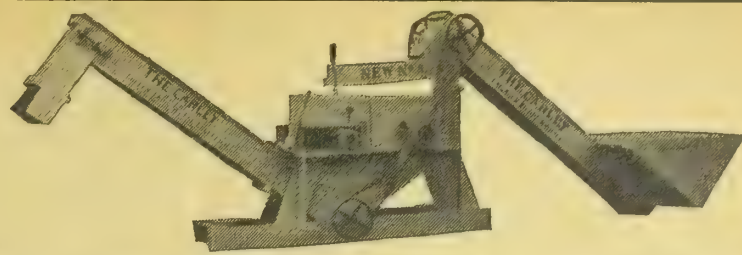
GEO. SEVERANCE,  
Agriculturist.

#### WHEAT EXPORT FROM THE UNITED STATES MAKING NEW HIGH RECORDS

Washington, D. C., 1914.

Large exports of domestic wheat in the three months which ended with September, 1914, brought the total for that period up to the highest point ever reached in the corresponding months of any year in the history of our export trade. The total exports of wheat, including flour in terms of wheat, in the first quarter of the current fiscal year aggregated 89½ million bushels, as against 59 million in the corresponding period of last year and 83 million in the July-September quarter of the fiscal year 1902, when exports of domestic wheat rose to their previous highest level. In the fiscal year 1902, the total was 234,772,515 bushels. Figures published in the "Monthly Summary of Foreign Commerce" by the Bureau of Foreign and Domestic Commerce of the Department of Commerce show that the exports of wheat in the quarter which ended with September last exceeded those of the complete fiscal years 1910, 1911, and 1912.

Most of this greatly increased exportation of domestic wheat was distributed to European countries, September alone showing consignments of wheat, exclusive of flour, in the following amount: To France, 7,572,000 bushels; the United Kingdom, 6,640,000; the Netherlands, 2,201,000; and other Europe, 5,390,000. Over 2,560,000 bushels were exported last month to Canada, while a very unusual transaction was the shipment of 580,000 bushels of wheat from Port Arthur, Texas, to Brazil. The notable features in the outward movement of flour was the market gain in shipments to Brazil and other countries of South America. Exports thereto in September were nearly double those of a year ago, while the aggregate to foreign countries as a whole showed practically no change.



**The Carley Roller  
Feed Mill** In Seven  
SIZES  
THE LATEST AND BEST MILL ON  
THE MARKET TODAY

Send for Catalog  
Manufactured only by  
**Colfax Iron Works, Inc.**  
Colfax, Wash.  
Successors to CARLEY BROTHERS

## \$82 A WEEK EARNING CAPACITY

### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment

Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

**Reiersen Machinery Co.**

SOLE MANUFACTURERS PORTLAND, OREGON



## BEST PEAS GROWN

KAUFMAN'S PROLIFIC, SHORT VINED, HAND PICKED BLUE BELL PEAS

\$240 PER ACRE. (Over 28 tons from 14 acres; was offered \$120 per ton) RECORD CROP OF PEAS!

Write for price list and circulars (used as supplementary reading in many High Schools).

W. H. KAUFMAN, Bellingham, Wash.,

## DONALD GROWN NURSERY STOCK

That is what you want. Now is the time to make arrangements for your fall's requirements. Mail us your want list for quotations and ask for our illustrated descriptive catalogue.

**DONALD NURSERY CO., Inc.**

Donald, Ore. SALESMEN WANTED.

## The Puyallup Nursery

Hardy Ornamental  
Nursery Stock a  
Specialty

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Shipping season begins in October.

Everything worth while in Roses, Gladioli, etc. Send for list.

Specimen Grounds, 702 PIONEER AVENUE, EAST  
A. LINGHAM PUYALLUP, WASH.

## ALFALFA HAY

From Grower Direct to User

This Hay is grown on our ranch at Mabton, Wash., and is cut and cured so as to afford the highest feeding value.

Order now because the price of hay will rise as winter approaches.

**KARR INVESTMENT CO.**

16 North 6th St.  
NORTH YAKIMA, WASH.

## VETCH CLOVER and other GRASS SEEDS

GET your orders in early to make sure of minimum price. Remember ours won't stay in the ground. They grow. Catalog and price list on application.

J. J. BUTZER

188 Front St., Portland, Ore.



The proportion of the domestic wheat product which is exported has greatly diminished in recent years. In 1901, 41.36 per cent. of the domestic wheat crop was exported; in 1902, following the record-breaking crop of 748 million bushels for the calen-

dar year immediately preceding, 31.37 per cent.; and in 1908, 25.71 per cent; while since that year the proportion exported has been less than 20 per cent., having fallen as low as 10.91 per cent. in the fiscal year 1911.

## IRRIGATION

**Adequate, available moisture  
at all seasons.**

### PROPOSED WASHINGTON WATER CODE.

The Washington Water Code Commission has formulated a proposed code for the attention of the next legislature, issued in pamphlet form. Those interested will address O. L. Waller, Pullman, Wash., Chairman of the committee, for a copy.

In a letter to the Horticulturist, Prof. Waller States:

Idaho, Oregon and Canada — on three sides of us—have excellent water laws and are rapidly bringing their arid lands under cultivation, while in Washington the inability of the water user to secure a record title to his water rights keeps business men and investors from risking money in irrigation and power developments.

Without state supervision the small water user is at the mercy of the big operator and unless his rights are determined before the old settlers, who generally are his only witnesses, are dead and gone, he or his heirs are likely to lose their rights through inability to produce evidence necessary to establish title in court.

Within the last decade the leading states in the arid west have revised their water laws and made some very important changes; providing for record titles to water so that abstracts of title may be made the same as for land titles; for police supervision; and for safety to the public in dam construction. In the compilation of this report the commissioners have had access to all of these revised statutes and to the court decrees thereon. They have further aimed not to disturb the judicial findings of the Supreme Court of this State.

In preparing this report the commissioners have undertaken;

First, to provide a method whereby parties now using the public water of the State may, in an inexpensive way, have their rights adjudicated, and made a matter of record; and

Second, to provide a way whereby parties wishing to acquire new water rights may do so under authority of the State, and under the protection thereof, with full assurance that when a permit to use water is once granted that there is water to supply the amount called for, and that the title to the said water right will be as good as that to the land upon which the water is used.

Third, provision has also been made for properly distributing the public waters of the State to those parties who are entitled to their use, and to offer sufficient police supervision to protect everyone in the peaceable and undistributed use of the water called for in his permit or decree.

Fourth, whenever necessary to secure safety to life and property, the State, through a State Hydraulic Engineer, is given authority to approve plans and specifications for dams, and to supervise the work thereon in so far as may be necessary to guarantee their proper and safe construction.

You will find nothing radical in the report. In its preparation the commissioners have made a careful study of recent legislation in other states, and have communicated with many of the officers charged with their execution. They have omitted everything from this report except absolute essentials, with the expectation that those charged with the administration of the laws would work out such future legislation as may be needed.

The recommendations in this report attempt only to guarantee water titles to the rightful holders thereof, to secure them against damage to life and property, and to protect them in the peaceable enjoyment of their rights.

It is the belief of the Commission that the enactment of these recommendations into law will also put an end to wild cat speculation in irrigated lands.

O. L. WALLER, Chairman,  
Washington Water Code Commission.  
Pullman, Wash.

### SUNNYSIDE CANAL EXTENSION.

On October 9th, the Benton County Commissioners let to W. A. Moraine, the contract for building a good road from Prosser to Benton City, at a price of something more than \$12,000. Nearly two-thirds of the total cost of this road will need to be expended on one mile, mainly rock work, about 5 miles above Benton City. This is a piece of road badly needed, and makes a link in the State road across the State.

After many unexpected and apparently interminable delays and the unwinding of miles of red tape, the Department of the Interior has finally approved the contract looking to the extension of the Sunnyside canal from its present terminal, six miles northwest of Prosser, to the neighborhood of Benton City, a distance of about eleven miles.

When the bids were opened on October 26, for the construction of the Sunnyside Extension Canal, the following were found to be the lowest:

For the entire canal, G. P. Wright, Tacoma, \$81,093.01.

The second bid was by Oregon Bridge & Construction Co., \$87,653.19.  
Valley Construction Co. bid \$91,625.40.

In accordance with the regulations of the Department of the Interior, the bids were forwarded to Washington, D. C., with the recommendations of those in charge of the matter at the Sunnyside end, and it is presumed that the contract will be let very soon.

Some of the settlers that have been holding on for some years in anticipation of water will feel greatly relieved when it comes. The contemplated extension will water 4730 acres of most excellent land. The canal will cover considerable more land,

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ORNAMENTALS  
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It is a good year to increase the ornamental planting. Thousands will come to the Pacific Coast seeking homes during the next few years. Do you wish to sell any part of your land, or your home place, or do you wish to encourage settlers who have some degree of taste and refinement? Then adorn your home with some ornamental plants, shrubs and trees. The cost is trifling compared with the actual value which may be derived. Our catalog contains valuable suggestions.

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RYE ETC. OVER 99  
PER CENT PURE

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**PEAR TREES**—A fine stock of Bartlett, Anjou, Bosc, Angoulene, Comice and others; also Dwarfs.

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**ORNAMENTALS**—Roses affording satisfaction, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce and other coniferous, and small evergreens.

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but an expert was employed to examine every 40-acre tract and eliminate every tract that cannot be classed as good farming land. This is decidedly a contrast from the ordinary proceedings of private irrigation companies, who sell title and water rights to sand-blows, rock piles, inaccessible canyons and all, if suckers can be found for buyers. The expected cost of the water rights for these lands, which will have to be enough to cover the cost of the canal, added to the price the settlers have already paid or will have to pay for the land, will make the proposed farms rather expensive, but it will be land on which things can be raised, and it is anticipated there will be a sufficiency of water.

The proposed Highland canal, to cover all the vast tracts above the Sunnyside canal for its entire length, is hoped for in the not distant future; and from this proposed canal it is expected to pipe water across the Yakima river to cover all the desirable land between Prosser and Kiona, and on southeast to the extensive Badger Flats. In addition there are vast tracts of splendid lands to the east and northeast of Kiona and Benton City, waiting only the "magic touch of water." W. M. SCOTT.

### IRRIGATION AND CROP STABILITY.

In his interesting address before the International Irrigation Congress, at Calgary last month, E. F. Benson, president of the Washington Irrigation Institute, referred to the Government work in the Yakima Valley, stating in part:

"The present plans when fully worked out will cost about \$15,000,000 and store over 1,000,000 acre feet yearly

"These works not only assure ample water for existing canals, which now irrigate about 300,000 acres, but make provision for the irrigation of 400,000 acres of additional land in this one valley.

"Other large areas in the state for which irrigation is being earnestly sought, are the Horse Heaven, the Palouse project and the Quincy Valley district, mounting in all to about 800,000 acres.

"Although one and a quarter million acres of dry land in the State of Washington are under consideration for irrigation, with no present prospect of anything being done unless, through some district organizations, federal aid can be secured.

"Very little of the irrigated land in Washington is devoted to small grains; fruit, hops, potatoes, and alfalfa, with its accompanying livestock, are the chief productions, but the increasing number of milk cows and hogs, is stimulating corn production to an extent not dreamed of a few years ago. A Washington farmer won the sweepstakes at The Dallas, Tex., corn show last winter, and the corn production for the state this year is estimated at 1,000,000 bushels. Under one irrigation project a careful crop census, taken after the 1913 crop was harvested, showed that 4516 acres in corn produced 225,000 bushels, an average of 50 bushels per acre.

"It may be of interest to know that this project containing 10,000 acres has, most of it, been watered for the past 20 years, that 58,300 acres is the total area irrigated up to this season; that 46,230 acres was the total area cropped during the season of 1913; that the market value of crops pro-

duced that year was \$2,820,786, an average of a little over \$61 per acre.

"The fruit business became so profitable a few years ago that exaggerated prices prevailed for orchards and orchard lands. One thousand dollars an acre for orchards and \$300 to \$400 an acre for unimproved lands, in the most desirable districts, were the rule and not the exception, and as high as \$2500 an acre has been paid in the different valleys for improved orchards, and a few deals were made at much higher prices.

"Such sales were widely heralded and prospective immigrants to our irrigated prairies went elsewhere to find cheaper lands.

"The hopes of the land-booming speculator went glimmering, as year after year the crop of immigrants failed to come.

"Meantime the farmers who have been growing alfalfa, milking cows and feeding hogs noticed no depreciation in the earnings of their farms.

#### Maximum Results.

A higher average efficiency Mr. Benson suggested, is attainable by further experiments, observation and practice. The average of 4 to 5 tons alfalfa per acre might be raised to 8 or 9 ton crops.

"Before much progress can be made in the direction of providing happy homes for the millions, public sentiment must be developed along the idea of:

"1st. 'Back to the land.'

"2nd. 'The responsibility of every landowner for the sacred trust of land ownership,' that he shall get the same into a producing condition in a reasonably short time.

"3rd. 'The making and using of the by-products of the farm, orchard and garden.'

"4th. 'The production of livestock.'

"5th. 'Improving market facilities.'

"In short, getting the maximum results from the land.

"Population in America is increasing much more rapidly than food production, and the man who with industry and intelligence prepares to feed the people will be sure of reasonable returns for his labor.

"If we should hear about 'the high cost of living' and the evils and hardships incident to the great congestion of population in our large cities, we must help the irrigation farmer to make the most of his opportunities, and get more lands under water and more farmers on those lands.

"In this we cannot go wrong, unless by deliberate exaggeration in representing the future of our irrigation districts.

"It is the province of this International Irrigation Congress and similar state and district associations, as well as commercial clubs and chambers of commerce throughout the country to awaken and direct a correct public sentiment, and until that is done vast areas of fertile land will continue to remain unirrigated, because the first and basic reason for building a canal is that the land is needed and will be speedily put under cultivation.

"The individuals, the organization and institution and the public officials who aid and encourage such development are engaged in the greatest economic and philanthropic work of this generation.

"They are laying the foundation for local and national prosperity, and helping to create thrifty rural communities and individuals, the surest foundation of good citizenship."

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Note these prices on carload lots of first quality burned Clay Drain Tile:

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APPLE TREES—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

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## A WOMAN'S THANKS

There is so much strong men are thankful for—

A nation's progress, or a slow strife's end;

And though I join my praise with theirs today,

Grave things are these I scarce can comprehend,

So vast are they;

And so apart, dear God, I pray thee take

My thanks for these, thy little blessings' sake.

The little common joys of every day,  
My garden blowing in an April wind,

A linnen's greeting and the morning fall  
Of happy sunshine through the opened blind.

The poplars tall  
That guard my threshold, and the peace that falls

Like Sabbath stillness from my humble walls.

The little simple joys that we forget  
Until we lose them; for the lamp that lights

The pages of the books I love best,  
The hearth's red welcoming on winter nights,

The kindly jest  
That moves within the circle, and the near

Companionship of those the heart holds dear.

The dear, accustomed joys we lightly take  
Too much for granted sometimes, as a child

His father's gifts; and so, remembering,  
For these my thanks, for these my treasures piled,

Each simple thing  
Those wiser may forget, dear Father, take

My thanks for these, thy little blessings' sake.

—Theodosia Garrison, in Harpers Bazar.

SCHOOL LUNCH

## NEEDS ATTENTION

"When it is considered that many school children depend upon the box-lunch for about one-third of their food supply, it is seen that its preparation is rather an important problem," says Mary Betz, of the College of Agriculture, Ohio State University. "A lunch may be a source of pleasure to a child; it may be full of surprises; or it may be a disappointment. Just as in the preparation of any other meal, there are three points to consider in getting up the school lunch—selection of proper food and the right amount of variety; preparation of food so that it will be palatable and digestible; and packing in an attractive, sanitary way. Often lunches consist of foods that are difficult to digest, such as meat, pie, doughnuts, cheese and pickles. There is a lack of the simple, more digestible foods, such as jelly, jam, peanut butter and lettuce sandwiches, custard, gingerbread, fruits, nuts and candy. Neatness should be emphasized in packing the lunch, for unat-

tractive food is not eaten with relish. Wax paper should be used to wrap up such articles as sandwiches, so they will not absorb flavors. A permanent container, made of tin, is better than a paper box or bag for daily use, since it can be cleaned easily, and prevents the food from drying out. Each article of food should be packed compactly in the container, because jostling is apt to spoil the lunch."

## TRAINING THE CHILD

The time to begin disciplining a child is the day it is born, writes a mother in Rural Californian. It is then that the correct sleeping and waking hours must be formed which make for the future comfort of both mother and babe.

My baby, under a year old, has long understood the meaning of "yes" and "no" and always gives a questioning "ah?" as his little hand reach for a new object.

I do not permit my children to be overindulged. A monthly outing is appreciated far more than daily trips, and candy and cookies are luxuries rather than an everyday occurrence. Constantly eating between meals causes a loss of appetite for substantial food and results in making them behave badly at the table. It also makes it impossible to keep them clean.

When company comes I know they will sit as nicely through a long dinner as a grown person could, and I feel free to take them to other people's houses, knowing they will not handle the bric-a-brac and that they will conduct themselves properly both there and on the cars.

I do not believe in always putting temptation out of their reach but teach them instead how and when the different articles in the household should be used. In our home the best we possess in china and glass is always in evidence and the children handle it freely but it is seldom indeed that anything is broken. If such a calamity occurs I explain that we will be unable to buy new and that we will all feel very sorry not to have our table prettily set; or if it must be replaced, that it will be necessary for us to deny ourselves some pleasure to save the necessary money. Allowing a child to use metal dishes but encourages him to use them carelessly.

Kindness to animals has become second nature. I do not allow them to kill bugs or squeeze the kittens to death and I am often called from my work to rescue a butterfly from the cat or a bug from some supposedly perilous position. When other children abuse insects or pull a butterfly's wings to pieces I insist upon their leaving them, refusing to play with them until they are willing to stop the cruel practice.

A most important but often lacking condition in rearing children is harmony between the parents. Quarreling and nagging reflect upon the child and if a man speaks disagreeably to his wife he may expect his son to address his mother in the same manner.

When irresponsible parents have so far spoiled a child that they can do

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All you need to complete the family circle is a

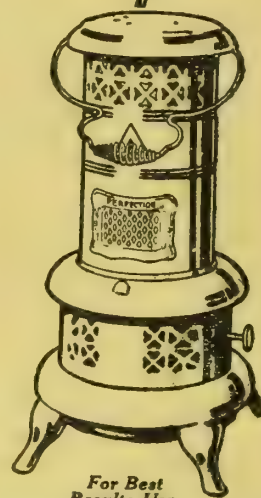
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nothing with him and he is a menace to the neighborhood the best possible course to pursue is to place him in school where a responsible person and trained disciplinarian will take him in charge. While it is an imposition to expect a teacher to do more than the parents are willing to do, one's duty to the child demands it and the earlier it is done the easier the task for the teacher. She has much to contend with, having the child but a few hours a day, but if she is at all tactful she will probably go far towards undoing the wrong already inflicted.

#### KITCHEN RECIPES

**Delicious Walnut Conserve**—Peel ripe figs and mash the pulp. To each pound of pulp add one pound of sugar and cook to a thick jam. This is a slow process and should be done over a slow fire, and the jam must be constantly watched and stirred, for the slightest scorching will spoil the flavor. Prepare English walnuts by shelling and chopping up the meats to a medium fineness. Do not put them through a meat chopper as that will make them too fine and oily. A cupful of chopped meats to two quarts of cooked jam will make a good proportion, but one can have as many nuts to the jam as liked. When the jam is cooked add the nuts and stir them thoroughly in the hot jam, but do not cook them. After stirring in the nuts fill jam glasses with the conserve, and when cold, cover with paraffine and set away in a cool place. This is one of the most delicious conserves imaginable, and when served with whipped cream, can not be equalled for delicacy.

—Georgina S. Townsend, Azusa.

**Carrot Pudding**—Mix 1 cup grated carrots (raw), 1 cup grated potatoes (raw), 1 cup brown sugar,  $1\frac{1}{2}$  cups flour, 1 cup raisins, 1 cup currants, 1 cup chopped suet, 1 teaspoon soda, 1 teaspoon cinnamon  $\frac{1}{4}$  teaspoon cloves, one cup walnut meats. Steam 3 hours. Serve with hard sauce.

—Rebecca Strutton, San Diego.

**Three-in-One Dessert**—This is a delicious dessert which combines the desirable qualities of pudding, pie and cake in one dessert.

Line a deep pie plate with your favorite pie crust and fill with the following mixture: Mix together 1 cup sugar, 2 heaping tablespoons flour and pinch of salt. Add butter size of an egg, melted, and yolks of 2 eggs. Beat all to a cream. Add to this the juice and grated rind of 2 medium-sized lemons, 1 cup milk, and lastly the whites of 2 eggs, beaten stiff. Bake one-half hour in rather slow oven. The result will be a flaky crust on the bottom, a delicate layer of cake on top and a dainty lemon filling between. Served with lemon sauce you will have pudding, with meringue you have pie, or simply frosted you have cake.

—Mrs. Lily Inglehart, Bellflower.

#### BRUISES IN FURNITURE

Here is a method which has been of great use in removing bruises from furniture: Wet the part with warm water; double a piece of brown paper five or six times; then soak it in warm water and lay it on the dent. Apply a warm (not hot) flatiron until the moisture has evaporated. If the bruises are not gone, repeat the process. You will find this very good, and if the surface of the furniture is

not broken the dent will disappear and leave no trace.—Exchange.

#### MINERALS IN THE DIET

The craving for minerals or ash in the diet is shown distinctly by school children when they eat slate pencils and chalk, says Jessie Hoover, of Domestic Science Dept., University, Moscow, Idaho. This appetite can be satisfied in a much better way by supplying mineral in the regular food supply.

#### Candy Eating Children.

Have you ever noticed the teeth of children addicted to the candy habit? Almost without exception these children have decayed teeth. Not less than two reasons can be given for this condition. The child that eats candy between meals and before breakfast seldom cares for the plain wholesome food which is rich in minerals. Such a child does not have a good supply of mineral and hence in the processes of metabolism the stored up lime is consumed and the teeth are honeycombed with holes. Too often we think that the enamel is broken away exposing the lime pulp beneath to deterioration while the fact is the pulpy portion of the teeth is perforated with holes and then for the lack of a proper foundation the enamel is crushed and the pulp exposed. In feeding children look well to the lime.

#### Iron for the Anaemic Child

If the child is anaemic, pale and languid select foods not only rich in lime but also rich in iron. Vegetables are a better source of iron than meat. Fruits, especially prunes, are rich in iron.

#### Foods Containing Lime.

|              |             |
|--------------|-------------|
| Milk         | Oranges     |
| Cabbage      | Rutabagas   |
| String Beans | Cauliflower |
| Peas         | Celery      |
| Cereal       | Cheese      |
| Asparagus    | Lettuce     |
| Blackberries | Cucumbers   |
| Buttermilk   | Molasses    |
| Carrots      | Onions      |
| Radishes     | Parsnip     |
| Pumpkins     |             |

#### Vegetables for Iron Diet

|           |              |
|-----------|--------------|
| Meat      | Lentils      |
| Carrots   | Lettuce      |
| Spinach   | Peas         |
| Asparagus | Onions       |
| Beets     | Potatoes     |
| Cabbage   | Radish       |
| Celery    | Strawberries |
| Eggs      | Tomatoes     |

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## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

ACME REALTY COMPANY  
401 Equitable Bldg, Tacoma, Wn.

## Ornament

your home yard at moderate cost  
Suggestions cheerfully given. Write today for our list and mention this paper.

MITCHELL NURSERY COMPANY  
Larchmont Station  
Tacoma, Wash.



LILLY'S SEEDS

Lilly's Seeds are not an experiment—they are tested in our laboratory and trial grounds. They are specially adapted to the Pacific Northwest and are true to name. Our valuable catalogue will be sent free on request. Dealers sell Lilly's Seeds. If not, write The Chas. H. Lilly Co., Seattle

## Raise Wheat

Big money will be made raising wheat next few years. We have some fine, well improved wheat farms in the best wheat raising section of Eastern Oregon, \$22.50 to \$25 per acre. Easy terms. Write us and mention this paper.

ACME REALTY COMPANY  
401 Equitable Building, Tacoma.



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### THE MILKING MACHINE.

By C. J. Zintheo, Agricultural Engineer with the John Deere Plow Company, Seattle, Wash.

Farmers who are following the progress of the times are aware that the milking machine has at last been perfected and has come to stay. Owing to the numerous failures during the experimental stage, a great deal of prejudice exists against the milking machine and this is the reason it is not more generally adopted. Of the several different types of machines, all are similar in the principle that they employ vacuum created by means of pumps of various designs driven by some form of motive power such as gasoline engine to draw the milk out of the udder through the teat cups into a bucket. The first machines employed continuous vacuum. This would draw the milk from the udder, but it would also draw the blood from the udder into the teat, congesting and inflaming it, thus injure the cow.

Afterwards the vacuum was interrupted, but the successful machine did not appear until another step was taken which employed compressed air to be forced against a rubber diaphragm inside of the teat cup. This gives an upward squeeze intermittent with the vacuum which forces the blood back into the udder while the milk is drawn out by vacuum at the bottom of the teat cup.

By this means there is absolutely no danger of injuring the cow no

the fly wheel of the engine which charges the storage battery while the milking is being done, thus utilizing the surplus power of the engine. From the vacuum pressure pump lead two lines of pipe, one carrying compressed air and the other vacuum. They are held in place by stall fixtures to which are attached the pulsators that interrupt the continuous vacuum. Rubber tubes lead to the teat cups and to the milk bucket. One cow is milked with each unit, but one man can operate three units at the same time and strip the cows, each unit will milk a little faster than a man, as it milks all four teats at the same time. Where the saving comes in is that with three units one man can milk about thirty cows in a little over an hour. By this means the milking machine really does not cost the farmer anything, as it pays for itself in what it saves in labor.

It has the other advantages of being clean and making the farmer independent of professional milkers. It also reduces the cost of producing the milk in that it puts into the farmer's pocket the money which he has been placing in the pocket of another.

The machine is adapted for three teated cows and it has often brought back to use teats that have been spoiled by hand milking. Stripping after the machine, is recommended, not on account of the milk obtained, but as a precautionary measure to see that the teats are in good healthy condition. The machine has no



### Don't Feed Butter Fat to the Hogs

To get every ounce of butter fat from your milk, the bowl of your separator must spin swiftly and smoothly. This requires a special oil. The oils you use on your other farm machinery are not suited to the delicate, high speed mechanism of the separator.

## Standard Hand Separator Oil

is of just the right body to quickly reach those finely adjusted, close fitting bearings. That is why it will give you perfect lubrication. If a better separator oil could be made, we would make it. Dealers everywhere.

**Standard Oil Company**  
(California)

### Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

### HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. W. Hollinshead, LADNERS, B. C.

### HOLSTEIN HEIFERS---Choice High Grade Stock

We are offering to sell 30 young Holstein cows, fall freshening; also a choice bunch of Holstein heifers out of registered bulls with dams on both sides great producers, bred to registered sires, will freshen in early spring. If you want something of this kind, tuberculin tested, write for particulars at once and mention this paper.

F. F. FOLSOM,  
204 4th Ave., Kent, Wash.

### Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.



Milking Machine Milking the Registered Jersey Cows of J. B. Early, Grandview, Wash.

matter how long the machine is left on the teats.

The vacuum and pressure pump are usually placed in the milk house away from the barn. It requires from two to three horse power gas engine to operate it but a four horse-power engine is usually installed, which is connected to a line shaft and from this is usually driven the milking machine, cream separator, pump for water, wood saw and often an electric dynamo is attached to

brains and will not solve all the dairy problems, but in the hands of a man of average intelligence with some degree of mechanical skill, the milking machine has proven itself to be a valuable aid to the dairy farmer, which makes his work more agreeable and more profitable and the advantage in its use will be to those who earliest install it in operation, since it enables the farmer to produce more butter fat with less outlay for hired labor.



**HEAVIER CREAM, BETTER BUTTER.**

Prof. J. D. Jarvis, advisory expert, Department Dairy and Creamery Improvement of the Delaval Separator Company has directed the dairymen's attention to the importance of producing heavy cream as well as the proper care of it in order to obtain a higher quality of butter.

Heavy cream, he says, means better quality butter for four important reasons:

(1) Heavy cream does not sour as quickly as thin cream.

(2) Heavy cream means a smaller amount to be taken care of, hence it is likely to be more thoroughly cooled and receive better care.

(3) Heavy cream can be pasteurized in the creamery with less loss of butter-fat in the buttermilk.

(4) Heavy cream permits of the use of larger amount of good starter.

**Other Advantages of Producing a Richer and Heavier Cream.**

In addition to making it possible to produce better butter and hence a higher price to the patron, heavy cream has other economic advantages over thin cream. For instance, it means that more skim-milk is retained on the farm for feeding purposes; the cost of transportation is materially less, the benefit of which fall directly upon the patron.

When the creamery receives both milk and sweet cream, the cream patron should receive more per pound for the butter-fat he delivers than should the milk patron because there is always a certain amount of butter-fat left in the skim-milk, and this, of course, does not reach the cream vat. For every 103 pounds of butter-fat delivered to the creamery in the form of whole milk only 100 pounds reaches the cream vat, whereas in the case of cream, all of the butter-fat delivered reaches the cream vat. The loss will, of course, vary more or less, but the above amount, or 3 per cent., is, according to Professor Farrington, about the average.

**Heavy Cream Advantageous to Creamery.**

If two adjoining creameries were operating under similar conditions, excepting one received cream testing 40 per cent. and the other cream testing 20 per cent., this difference would soon cause the latter creamery to fail.

Up-to-date creameries receiving cream which is more or less sour follow the practice of pasteurizing the cream in order to improve the quality of the butter. If the cream tests low in butter-fat the losses will be excessive because the practice of pasteurizing causes the smallest fat globules to become imprisoned in the coagulated curd and hence lost in the buttermilk. The loss in the buttermilk due to this cause may run as high as 1/2% of butter-fat.

The capacity of a creamery can be materially increased by influencing the patrons to deliver a rich cream instead of a thin cream, because the capacity of the can, cream vats, churns, etc., is measured in gallons of cream and not in pounds of butter.

Some creameries today are following the policy of taking the percentage of butter-fat into consideration in determining the price. The cream which is clean flavored and tests 30% or over, will receive top quotations, which cream testing less than 30% will receive one cent or

two cents less per pound for butter-fat.

**High Quality Butter From Gathered Cream.**

That just as good butter can be made from hand separator as from whole milk separator at the creamery cannot be disputed. At the International Dairy Show in Milwaukee in 1912, over 80% of the Wisconsin entries of butter were made in creameries that received hand separator cream and the average score was 92.8 points. The entries from hand separator creameries in Minnesota and Iowa compared favorably with the Wisconsin score. Nevertheless the quality of creamery butter, as a whole, has been lowered a few points and the greater majority of creameries must change their general method of creamery operation with reference to quality of cream received before a marked improvement in the quality of butter will be achieved. Butter manufacturers are beginning to recognize that there is now a greater range in the quality of creamery butter than formerly, and they are making their quotations accordingly. Thus the progressive, up-to-date creamery is put in position to receive direct benefit for its efforts in the way of improving the quality of butter through improving the quality of cream delivered by its patrons.

**FEED RATION.****Corn Ensilage in Connection with Other Feeds.**

Ironclad directions for feeding cows cannot be given. In general, however, they should be supplied with all the roughage they will clean up with grain in proportion to butterfat produced. The hay will ordinarily range between 5 and 12 pounds per cow per day when fed in connection with corn silage. For Holsteins 1 pound of concentrates for each 4 pounds of milk produced will prove about right. For Jerseys 1 pound for each 3 pounds of milk or less will come nearer meeting the requirements. The grain for other breeds will vary between these two according to the quality of milk produced. A good rule is to feed seven times as much grain as there is butterfat produced, is the statement in Farmer's Bulletin 578, U. S. Department of Agriculture.

The following rations will be found good:

For a 1,300-pound cow yielding 40 pounds of milk testing 3.5 per cent:

|                                   | Pounds |
|-----------------------------------|--------|
| Silage (corn) .....               | 40     |
| Clover, cowpea, or alfalfa hay .. | 10     |
| Grain mixture .....               | 10     |

For the same cow yielding 20 pounds of 3.5 per cent milk:

|                                   | Pounds |
|-----------------------------------|--------|
| Silage .....                      | 40     |
| Clover, cowpea, or alfalfa hay .. | 5      |
| Grain mixture .....               | 5      |

For a 900-pound cow yielding 30 pounds of 5 per cent milk:

|                                   | Pounds |
|-----------------------------------|--------|
| Silage .....                      | 30     |
| Clover, cowpea, or alfalfa hay .. | 10     |
| Grain mixture .....               | 11     |

For the same cow yielding 15 pounds of 5 per cent milk:

|                                   | Pounds |
|-----------------------------------|--------|
| Silage .....                      | 30     |
| Clover, cowpea, or alfalfa hay .. | 8      |
| Grain mixture .....               | 5      |

A good grain mixture to be used in a ration which includes silage and



Quarantine measures against the shipment of cattle from certain districts and states east, is likely to interfere with the movement of stock to the Coast, and buyers have a more limited field from which to select. Prices are now within easy reach of dairymen, but there is no telling how soon it may be very difficult to get good dairy cows at any price. So long as there are any left in our last shipment we are giving buyers their choice in the order of their selections.

The Holsteins are, as usual in our shipments, fresh and near fresh cows of large milk capacity. In youngsters buyers have an opportunity to get some pure-breds with high ancestral records at inside prices. We also have young pure-bred stock of our own raising very choice. Always glad to give full particulars. Write or call.

**FRYAR & COMPANY**

Please Mention  
This Paper.

SUMNER, WASH.

**Holsteins For Sale--A. R. O. Breeding**

We offer 12 females of the very best and most promising heifers raised here, five coming fresh this late fall and winter; also a young bull ready for service. All out of A. R. O. dams.

J. H. DE HOOGH & SON

Twin Brook Stock Farm

Lynden, Wash.

**Fresh High Grade Cows**

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condenser patrons.

Write for prices and particulars and submit wants.

J. D. ROSS & SON

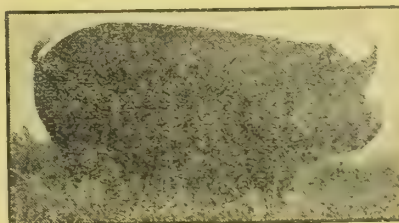
Kent, Wash.

**A. J. C. C. JERSEYS****Big Producers**

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

**BERKSHIRES**

Two boars, fit for service. Will benefit any farm herd. Now booking orders for weaned pigs, \$10 to \$15 each. Write us if you want foundation stock.

WOODLAND FARM  
Thurston County Lacey, Wash.

P. S. Artichokes—We can book a few more orders for seed.



some sort of leguminous hay is composed of:

Parts  
Corn chop ..... 4  
Wheat bran ..... 2  
Linseed-oil meal or cottonseed meal 1  
In case the hay used is not of this kind some of the corn chop may be replaced by linseed or cottonseed meal. In many instances brewers' dried grains or crushed oats may be profitably substituted for the bran, and oftentimes gluten products can be used to advantage in place of bran or oil meals.

The time to feed silage is directly after milking or at least several hour before milking. If fed immediately before milking the silage odors may pass through the cow's body into the milk. Besides, the milk may receive some taints directly from the stable air. On the other hand, if feeding is done subsequent to milking, the volatile silage odors will have been thrown off before the next milking hour. Silage is usually fed twice a day.

Calves may be fed silage as soon as they are old enough to eat it. It is perhaps of greater importance that the silage be free from mold or decay when given to calves than when given to mature stock. They may be given all the silage they will eat up clean at all times. Yearling calves will consume about one-half as much as mature stock; that is, from 15 to 20 or more pounds a day. When supplemented with some good leguminous hay, little, if any, grain will be required to keep the calves in a thrifty, growing condition.

One of the most trying seasons of the year for the dairy cow is the latter part of summer and early fall. At this season the pastures are often short or dried up, and in such cases it is a common mistake of dairymen to let their cows drop off in flow of milk through lack of feed. Later they find it impossible to restore the milk flow, no matter how the cows are fed. Good dairy practice demands that the milk flow be maintained at a high level all the time from parturition to drying off. It becomes necessary, therefore, to supply some feed to take the place of the grass. The easiest way to do this is by means of silage. Silage is cheaper and decidedly more convenient to use than soiling crops.

#### GUERNSEYS BECOMING POPULAR

Editor Northwest Horticulturist and Dairyman:

At the Spokane Interstate Fair, we won Senior Champion Bull, Grand Champion Bull, Junior Champion Bull, Junior Champion Cow and Grand Champion Cow. First prize in Aged Bull, yearling bull, bull calf, aged cow, senior calf, junior heifer calf, graded herd, breeder's calf herd, get of sire and produce of cow, second prize in yearling bull, calf bull, three year old cow, senior yearling heifer, junior yearling heifer, senior heifer calf and produce of cow.

At the Washington State Fair won, 1st in aged bull, junior yearling bull, senior bull calf, three year old cow, senior heifer calf, junior heifer calf, and calf herd, 2nd place was won in the junior yearling bulls, junior calf bull, aged cow, two year old heifer, and best young herd. Third prize was won in junior yearling bull and best aged herd. Senior champion bull and grand champion bull was won by King of Medfield, who also

carried off the championships at Spokane. Mr. Nelson, the judge of the dairy cattle at North Yakima said that he was one of the best Guernsey bulls that he had seen and would compare favorably with the bulls at the National Dairy Show.

There is a great deal more interest taken in the Guernseys this year than ever before, and the demand for heifers and bulls is greater than the supply, people seem to be awakening to the superior merits of the Guernsey as a dairy cow, and it seems as though it will be but a short time before the Guernsey will vie with the Holstein for popularity.

Yours truly,  
A. L. GILE.

Chinook, Wash.

#### HULBERT'S RECORD HOLSTEINS

At the Skagit County Fair, J. H. Hulbert, of LaConner, was awarded first prizes on Holstein bulls, 2 years, over 1 year and under 1 year, also, first and second on age cow, first on 2 year heifer and 1 year heifer, and first on herd, according to an exchange.

Mr. Hulbert is completing some good A. R. O. records and by another year will show some fine youngsters as produce of his noted herd sire.

#### JERSEYS ON ELECTRIC LIGHT FARM

In a recent letter Mr. Burt Pease, proprietor of Electric Light Farm, Ellensburg, Wash., states he has sold the last of his high grade Jerseys and is now devoting entire attention to pure breeds of which he has 42 head on hand of this breed. They are tuberculin tested and the cows are qualifying for the Register of Merit, 15 being already on test and all will be accepted. At the rate of increase, Mr. Pease states, he will soon have more than can profitably be handled on his farm, and must part with either cows or youngsters, but realizes there is a good degree of satisfaction to both seller and buyer in being able to guarantee quality.

A silo was built last season and enough choice, well matured corn raised to fill it. It is the first years experience with corn ensilage on this place, but Mr. Pease is confident that the average cost of feed per head will be reduced, thus increasing the stock carrying capacity of his farm.

The corn ensilage will be fed in connection with alfalfa and clover hay and a little mixed grain concentrate.

#### LEADING COWS OF ALL BREEDS.

John Sibley in Register of Merit Progress

The breeds having the most cows in the advanced registry make the best showing in all the tables given below. The Holsteins had on November 10, 1913, 22,500 officially tested cows, but most of them were tested for short time periods. The Jerseys and Guernseys on the same day had 2,417 and 2,396, respectively, and their leading cows have very similar records. The Ayrshires to February 1914 had 1,151 cows in the advanced register. It is hardly fair to compare the Brown Swiss with cows of the other breeds, since on December 8, 1913, only 94 of them had been tested, and I include them only after stating that the breeds have an ad-



## DAIRYMEN:— write us for information about LARROWE'S DRIED BEET PULP

—the milk producing,  
succulent, vegetable feed

WE want to send you free a copy of our booklet, "Profitable Feeding." It contains valuable information about feeds and feeding—also gives facts about dried beet pulp and how it should be fed. Send for a copy today—a postal will do.

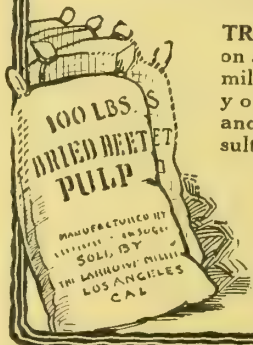


—will increase your milk supply from 1 to 5 lbs. of milk per cow a day, and keep your cows practically free from udder troubles.

It is simply the pure, shredded root of the sugar beet with only the sugar and water extracted. (Can also be had with molasses if desired.) Swells to six times its original bulk when moistened—thus furnishing as great succulence as silage and more than five times as much nutriment. It is also a splendid feed for fattening; for horses, hogs, poultry, etc.

### THE Larrowe Milling Co.

607-608 Central Building,  
Los Angeles.



TRY 1 SACK  
on a cow whose  
milk record  
you know—  
and watch re-  
sults.

ORDER  
FROM  
YOUR  
DEALER  
TODAY

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

A. BENSON  
Lynden, Wash.

## Windcrest Jersey Farm

Some choice young registered Jerseys for sale, both sexes. Large producers of milk. Test 5.5 to 6.5%. Herd headed by Eminent. Write for prices.

O. F. LEWIS

R. F. D. 1 Blaine, Wash.

## PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.

## Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD  
Route 1, Box 12 Fairbanks, Wash.

## FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

## Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

## LINBARGER, RALPH & GUE

### AUCTIONEERS

Years of experience, thoroughly posted.

Geo. A. Gue, Ridgefield, Wash.  
L. H. Linbarger, North Yakima, Wash.  
W. H. Ralph, Nez Perce, Idaho.  
Write for dates.

## JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.  
JEFFERY HILTON,  
Marysville, Wash.

## The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm.  
Write for prices on trial-lot shipments.

### THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.

## Meadow Brook Farm

### Breeders' of Pure Bred Ayrshire Cattle

A. P. Stockwell, Aberdeen, Wash.

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to



vantage corresponding to their number of tested cows.

The Holstein-Friesian Association makes a specialty of short time tests. Their yearly tests are semi-official. The other breed associations conduct official yearly tests.

All the accompanying lists are based on butter production. The figures from the different associations are correct as nearly as possible to the same dates. The Jerseys are to January 30, 1914; the Guernseys to February 16, 1914; the Ayrshires to some time in February 1914; and the

Brown Swiss to December 8, 1913. After giving the dozen leading cows of all breeds at all ages, I list them according to ages, giving in that case only the leader of each breed at each age. Then I average the five best cows of each breed.

The widespread practice of official testing by all the breed associations, who together have tested the surprising number of 28,500 cows, should be a source of great satisfaction to those Jersey breeders who do test their cows, and to those who do not, a cause of alarm.

Leading Cows at All Ages

|                                      | Milk   | Estimated % 85 | Butter % fat |
|--------------------------------------|--------|----------------|--------------|
| H. Banostine Belle de Kol .....      | 27,404 | 3.86           | 1245         |
| H. Pontiac Clothilde de Kol 2d ..... | 25,318 | 4.02           | 1197         |
| J. Sophie 19th of Hood Farm .....    | 17,557 | 5.69           | 1175         |
| H. High-lawn Hartog de Kol .....     | 25,592 | 3.90           | 1174         |
| H. Colantha 4th's Johanna .....      | 27,432 | 3.64           | 1174         |
| H. Daisy Grace de Kol .....          | 21,718 | 4.43           | 1133         |
| J. Eminent's Bess .....              | 18,782 | 5.13           | 1132         |
| G. Spotswood Daisy Pearl .....       | 88,602 | 5.15           | 1121         |
| J. Jacobs Irene .....                | 17,253 | 5.52           | 1121         |
| J. Olympia's Fern .....              | 16,147 | 5.81           | 1103         |
| G. Miranda of Mapleton .....         | 16,630 | 5.57           | 1091         |
| H. Creamelle Vale .....              | 29,591 | 3.12           | 1088         |

Since these figures were received from the breed associations, a Guernsey cow has broken the world's record, with a production of 1262 lbs. butter 85 per cent. fat in one year, and a Jersey, Spermfild Owl's Eva,

has made 1,168 lbs. estimated butter in one year, and so they enter the ranks of the first dozen cows of all breeds, thereby crowding out a Holstein. Thus five Jerseys, five Holsteins, and two Guernseys comprise the dozen.

Cows Under Three Years

|                                   | Milk   | Estimated % 85 | Butter % fat |
|-----------------------------------|--------|----------------|--------------|
| H. K. P. Manor Kate .....         | 22,106 | 3.70           | 963          |
| J. Pearly Exile St. Lambert ..... | 12,345 | 6.61           | 960          |
| G. Langwater Hope .....           | 15,078 | 5.13           | 910          |
| A. Burchan Joan .....             | 12,773 | 4.17           | 626          |
| B. Scalotta K. ....               | 9,286  | 4.88           | 534          |

Three-Year-Old Cows

|                                 |        |      |      |
|---------------------------------|--------|------|------|
| G. Dolly Dimple .....           | 18,458 | 4.91 | 1066 |
| H. Queen Juliana Dirkje .....   | 19,124 | 4.27 | 961  |
| J. Lass 40th of Hood Farm ..... | 15,362 | 4.86 | 879  |
| A. The Abbess of Torr .....     | 14,582 | 4.39 | 754  |
| B. Olga B. ....                 | 15,602 | 3.52 | 645  |

Four-Year-Old Cows

|                                       |        |      |      |
|---------------------------------------|--------|------|------|
| H. Daisy Grace de Kol .....           | 21,718 | 4.43 | 1133 |
| J. Olympia's Fern .....               | 16,147 | 5.81 | 1103 |
| G. Dairymaid of Pinehurst .....       | 17,285 | 5.27 | 1071 |
| A. Anges Wallace of Maple Grove ..... | 17,657 | 4.65 | 966  |
| B. Merry of Allynhurst .....          | 14,371 | 4.02 | 681  |

Cows Over Five Years

|                                     |        |      |      |
|-------------------------------------|--------|------|------|
| H. Banostine Belle de Kol .....     | 27,104 | 3.86 | 1245 |
| J. Sophie 19th of Hood Farm .....   | 17,557 | 5.69 | 1175 |
| G. Spotswood Daisy Pearl .....      | 18,602 | 5.15 | 1126 |
| A. Auchenbrain Brown Kate 4th ..... | 23,022 | 3.99 | 1080 |
| B. College Bravura 2d .....         | 19,460 | 4.10 | 939  |

Average Best Five Cows All Ages

|                   |        |      |      |
|-------------------|--------|------|------|
| Holsteins .....   | 25,493 | 3.94 | 1184 |
| J Jerseys .....   | 17,030 | 5.43 | 1092 |
| Guernseys .....   | 17,131 | 5.36 | 1082 |
| Ayrshires .....   | 20,383 | 4.12 | 1001 |
| Brown Swiss ..... | 16,475 | 4.08 | 791  |

In all the tables, A stands for Ayrshires; B. for Brown Swiss; G. for

Guernsey; H. for Holstein, and J. for Jersey.

COOPERATION WITH OHIO CREAMERIES

The two largest creameries in Ohio are operated on the private management plan, organized on the cooperative basis.

The company at Zanesville receives the cream of patrons, computes the amount of butter-fat content, manufactures this into butter, and sells the product. After deducting from the proceeds the expenses and a commission of one and a half cent per pound for handling the cream, the

net profits are returned to the patrons in proportion to the cream sent in during the month. Out of the one and a half cent commission the company pays for the buildings, machinery, repairs, and dividends to the stockholders. The company has succeeded in maintaining a price of two cents above Elgin for butter-fat. There is general satisfaction among the members with the cream tests, which often afford the greatest source of dissatisfaction among other companies. This company has some fifteen hundred patrons; it does a busi-

BURNAMWOOD FARM

Offers bull calf eight months old and well grown. He will be a credit wherever he goes both to me and his purchaser. He is a first class young show bull. His dam has an A. R. O. record and his sire is a son of imported "Karel Bos." He is marked about evenly black and white. He will be sold with a guarantee to please. Price on application.

BURNAMWOOD FARM SNOHOMISH WASH.



Holsteins Fresh Cows & Heifer Calves

A large practical milking herd from which to select.

While dairymen are making selections of some large bunches of cows from our herd we were fortunately prepared in having stocked up in the early part of the summer. We have some choice cows, coming fresh in a few weeks, which having been acclimated should give a high measure of satisfaction in any dairy. Our young heifers are coming on in fine shape. Their breeding and good dairy type is pleasing buyers who are now making selections from these youngsters.

We also have some fine two-year-old, pure-bred bulls with high records back on both sides to offer at reasonable prices. Having a large herd of practical dairy cattle on hand we can supply almost any want in the dairy cattle line, as corroborated by our many satisfied patrons.

Write or make appointment for further particulars.

VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

YOUNG HOLSTEIN CATTLE FOR SALE

Desiring to confine my dairying to one breed of dairy cattle instead of two, have decided to sell 10 Holstein cows under six years, all coming fresh before January; also 5 coming-two-year heifers to freshen during the winter, and 5 choice calves. The cows are all good producers and all the stock is in excellent condition, high grade and has given satisfaction in my herd. I am offering the lot, or as individuals, at reasonable prices, all guaranteed as represented. For further particulars, description and prices, write or call

C. I. MEAD

California Bldg.

Prop. Mountain View Farm.

Tacoma, Wash.

Please mention this paper.

A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.

J. W. Clise, Owner

WILLOWMOOR FARMS, Redmond, Washington

Waikiki Farm

Breeders of

JERSEY and Ayrshire CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

HAMPSHIRE SWINE

"THE HOG WITH-OUT A HOLLOW"

Has them all beat for rustling and making the most meat at the least cost. It is the bacon hog for the Coast section. Large litters. Get your foundation stock from

W. P. TYLER,

Route 1, Granger, Wash.



ness of \$650,000 per year and is growing rapidly.

The plant at Sunbury is the pioneer cooperative creamery in the State, having been organized in 1892. It operates on the same principle as the West Jefferson company of Columbus except that it handles the whole milk instead of cream alone. The difficulty of exact cream tests is thereby eliminated, although the company has a milk tester in the field continually. The company charges five cents per cwt. for handling the milk. To facilitate the handling of the product, fifty skimming stations have been established at different points. The farmers of this community have been realizing almost three cents above Elgin; in which amount is figured the value of the skimmed milk, which is returned to the producer. Last year some 750,000 pounds of butter and 40,000 gallons of cream were sold, there being 1,100 patrons.

### CHEESE MAKING.

In the past, it is true, American cheese makers have been confronted by several difficulties, but government investigations have solved many of these problems and it is now possible for expert cheese makers to turn out Swiss cheese of uniformly high quality.

Camembert has been made in America with some success already. This variety has suffered more, however, from actual opposition by the promoter of the imported article than other kinds. Camembert is ripened quickly and reaches the consumer within a month of manufacture. This is, therefore, an opportunity for the American maker freed from competition to sell his article and by the fuller opportunity to work his factory, to perfect his method to such a degree as to hold that market when competition returns. Though more perishable than Cheddar, Swiss and other varieties, this should not prove to be a serious obstacle to increasing the output, for Camembert of the best quality always commands a good price.

In addition to Camembert there are a number of other fancy foreign cheeses which are popular here and which could doubtless be imitated successfully by American cheese makers after a little experimental work. Among these varieties are Edam, Gouda, Parmesan, Roquefort, Stilton, and Gorgonzola. Although there seems to be no reason why such cheeses should not be made in the United States, they do not, in the opinion of experts, offer at the present time the most promising field for American cheese makers. For the present at least it would probably be better for them to encourage the demand for standard types, such as Cheddar, Swiss, Limburger, pineapple, etc. The field for Cheddar is particularly promising because of the fact that the flavor of this cheese, while always distinctive, can, nevertheless, be made to vary widely. This variation enables it to act as a substitute for a number of other varieties. In short, the experts in the Department of Agriculture are confident that with care and foresight at the present time the American producers will do much to place American cheese on a permanent equality with the European varieties and sweep away a prejudice that has held back the industry in the past.

### AYRSHIRE BULL OF HIGHEST RECORD

In a recent letter to the Horticulturist and Dairyman Mr. J. W. Clise, Proprietor of the Willowmoor Farm, Redmond, Wash., writes that his cow Lily of Willowmoor, until about a year ago holding World's record for production for Ayrshires, has given birth to a bull calf, whose sire's dam is Dora, another World's record cow. Thus crossing the second and third producing strains of Ayrshires as shown by official production records.

No other Ayrshire farm in the world can cross two animals of such producing capacities for the simple reason that no other farm has more than one high producing strain. This is the crossing of a 22,000 pound and a 21,000 pound production record, affording offspring of highest mark in Ayrshires.

### LYNDEN CO-OPERATIVE CREAMERY.

\$284,187 Business Last Year.

About twelve years ago a few dairymen at Lynden, Washington, organized a co-operative creamery. They were determined to be successful working for the best interests of each and all, on the basis plan of farmers to their patrons the consumers, the aim being to control the sale of their product selling at a fair market price.

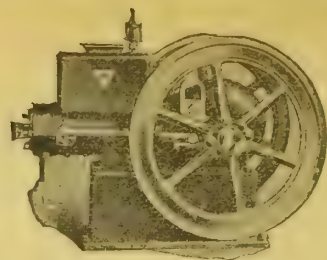
The first year each member got an average of two cents less per pound than some of the creameries were paying their patrons. But instead of discouragement this was considered a part of the investment where more or less experimenting is necessary to establish a new business, on the same principle as any good farmer finds it necessary where undertaking new lines of progress. The second year a better showing was made and each year the plant has grown until now it has become a large magnet attractive to dairymen who have cream to sell, also commands the best bids of those selling supplies and material required for a plant of this kind. Salt, butter, boxes and cream cans are bought by the car load, and bills are discounted, so the channel between those who sell goods to this creamery as well as that to the consumer is shortened as much as possible the profit margin from both avenues being made for the benefit of the creamery owners and patrons. The two cents per pound loss the first year when the foundation was laid is coming back with a good dividend and interest. The loss so considered at that time is in reality a good investment.

The present building is 44x100 feet having two 1000-pound churns and four 500 gallon ripeners. They employ seven men in the creamery, have 15 wagons getting cream and a pay roll of \$1200 a month. A refrigerator is being built to cost about \$3000.

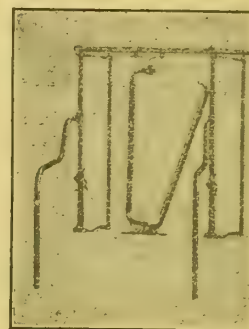
The stock was issued at \$10 per share to each man, buyers being limited to ten shares each and no man has more than one vote. No stock was sold for investment outside the patrons.

Only a ten per cent dividend was paid on the capital stock and all profits go back to the man who milks the cows. A sinking fund of one-half cent a pound butter-fat was established at first, one-fourth cent later, and even less at the present

## The De Laval Line



We design and equip cow stables, dairy houses, certified milk plants, creameries, cheese factories and ice cream plants. AUTOMATIC OILING DE LAVAL CREAM SEPARATORS ALPHA GASOLINE AND DISTILLATE ENGINES IDEAL GREEN FEED SILOS JAMES BARN EQUIPMENT MODERN SANITARY DAIRY AND CREAMERY APPARATUS



### DE LAVAL DAIRY SUPPLY COMPANY

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

"Everything for Dairy and Creamery"

## Guernseys on the Increase

### Augustine & Kyer's Registered Herd.

On a trip to the farm of Augustine & Kyer, across Lake Washington from Seattle, the visitor is shown a herd of registered Guernseys whose authenticated records are above the 500-pound mark in butter fat production. The farm is an up-to-date plant, barns well lighted and arranged in the best possible manner for sanitation. The farming operation is so planned that the largest amount of feed possible to grow is produced, including oats, clover, hay, clover pasture and some corn ensilage. This herd was purchased by the firm in the East some years ago to supply a high quality product for their noted grocery establishment in Seattle, and during the last two years have accumulated some surplus bulls some of which have been taken over by different leading dairy farmers who appreciate that it would cost them considerably more to obtain sires of like breeding and quality from any place East.

At the present time they are offering to sell one bull 18 months of age, one yearling and one four months old, all out of Melba's May Prince, which is a descendant of the famous May Rose King, the sire of some noted producing cows. To avoid inbreeding Mr. Kyer must change and for the benefit of the development of the dairy industry will price these sires low for this breed and give easy terms. This farm also has a surplus of choice Duroc pigs which are being sold for \$10 each at weaning age.

Those interested will obtain more complete information by addressing

### Augustine & Kyer

115 First St., Seattle, Wash.



### Registered A.J.C.C. Jerseys

Young bulls from heavy producers FOR SALE

Grandsires have many tested daughters. Also some choice purebred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

### BLACK LEG

### LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50 Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

### FOR REGISTERED DUROC JERSEY

bred sows and male pigs, write McK. Edwards, Valley, Wash.

### Electric Light Farm

### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculine tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

### AUCTIONEER

### WM. ATKINSON

Vancouver Bk., Vancouver, B. C.

Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.



time; out of which fund all machinery is kept in good repair and the needed improvements made. The man who delivered the most cream paid the most in keeping up the cream plant, irrespective of whether he owned capital stock or not.

"The directors hold a meeting every month and no bills are paid until after the directors have placed their O K on them. The manager meets with the directors and brings all important matters before them. The directors receive a semi-monthly statement of all the business done during the two weeks, which shows the details of the management; where the butter, sweet cream, buttermilk, and eggs were sold; gains and losses; cream received; average test; overrun; number of patrons, etc.

"The creamery has always been progressive. It has always tried to help educate the cream shipper, for ignorant and unenlightened people have no place in a co-operative movement. For the last seven years, says Pacific Homestead, the creamery has sent two or more of its directors to attend the meeting of the State Dairymen's Association.

### WASHINGTON DAIRYMAN'S CONVENTION

The 22nd Annual Meeting at Chehalis.

A. B. Nystrom, secretary-treasurer of Washington State Dairymen's Association has issued preliminary announcements for the meeting to be held at Chehalis on December 16, 17 and 18. A large attendance is anticipated, much interest is being taken by the dairymen of Southwestern Washington.

The program now in preparation covers topic of vital importance to

dairymen at the present time. The problems pertaining to economical production, questions of grade and uniformity of product, the business of marketing and the ultimate endeavors for harmonious concerted action with fairness to each individual are features all to be carefully considered. Those who are interested will watch the newspapers for further detail announcements.

### WILLOWMOOR AYRSHIRES BEING SHIPPED

We shipped in early part of November the following animals:

To Petaluma, California, one Robin Hood and one Queechy bull. To the Northern Hospital, this State, one Peter Pan bull and two heifers out of imported stock, and to North Yakima one bull.

J. W. CLISE,  
Redmond, Wash.

### PURE BREED JERSEYS FOR SHOWS

At the Skagit County Fair, held at Burlington this year, the only Jersey bull mentioned in the local press, and awarded a prize, was a grade while in Holsteins and Guernseys the sires exhibited and awarded prizes were all registered.

The grade Jersey bull may have been a good animal, but not being subject to registry could not establish any definite record as to breeding and producing capacity.

The Jersey breeders of Washington are doing well to organize and educate breeders to the importance of showing animals of that breed which have established records that can be traced.

## Fighting Foot and Mouth Disease

Statement from Secretary of Agriculture Regarding Federal Measures.

The Secretary of Agriculture, Washington, D. C., regarding the quarantine for foot-and-mouth disease states:

The present outbreak of the foot-and-mouth disease, which is one of the most contagious and destructive diseases of cattle, swine and sheep, exceeds in area affected any of the five previous outbreaks in this country. Unless the infection can be immediately localized and quickly eradicated, it threatens untold losses among live stock.

So contagious is the disease that in past outbreaks where but one animal in a herd was infected, the entire herd in almost all cases later contracted the sickness. While the mortality is not high the effects of the disease even on animals that recover are such as to make them practically useless. They lose flesh rapidly; in the case of cows, the milk dries up or is made dangerous for human consumption; in the case of breeding animals, the animal once infected becomes valueless for breeding, as it may continue to be a constant carrier of contagion.

It is possible to cure the external symptoms, but during the process of attempting to cure one sick animal the chances are that hundreds of others may be infected. The treatment or killing of a single animal in a herd was tried in an outbreak and did not prove effective, for the reason that the remainder of the herd soon became affected and had to be killed.

As a result of the five outbreaks

in this country, and other disastrous epidemics of the disease in Europe and Great Britain, veterinary authorities of the United States are agreed that the only method of combatting the disease is to stop all movement of stock and material which have been subjected to any danger of infection, and to kill off without delay all herds in which the disease has gained any foothold. This enables the authorities to eradicate affected herds and to isolate and hold under observation all suspected herds.

For these reasons, the Department of Agriculture has already quarantined ten States for the foot-and-mouth disease. The Federal quarantine prevents all interstate movement of stock and materials likely to carry the infection. At the same time, the State authorities are imposing local quarantines which prevent the passage of animals from farms or localities known to be infected to other localities in the same State in which the disease has not appeared. Each infected herd, as rapidly as the disease is discovered, is killed and the dead animals buried in a covering of lime. The skins of the animals are slashed so as to permit the rapid action of the lime.

The owner of the slaughtered animals is reimbursed on basis of the appraised value of the herd, the appraiser being appointed by the State. The expense of the whole process of condemnation and disinfection is divided equally between the Federal and State Governments.

Until the entire premises have been

# Gombault's Caustic Balsam

The Worlds Greatest and Surest  
Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

### SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,  
WIND PUFFS,  
THRUSH,  
DIPHTHERIA,  
SKIN DISEASES,  
RINGBONE,  
PINK EYE,  
SWEENEY,  
BONY TUMORS,  
LAMENESS FROM  
SPAVIN,  
QUARTER CRACKS,  
SCRATCHES,  
POLL EVIL,  
PARASITES.

### REMOVES

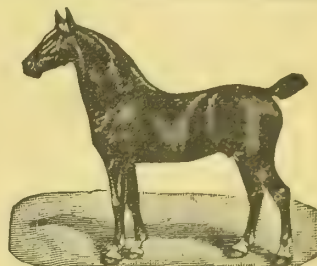
BUNCHES or  
BLEMISHES,  
SPLINTS,  
CAPPED HOCK,  
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard  
VETERINARY REMEDY

Always Reliable. Sure in Results.



None genuine without the signature of  
The Lawrence-Williams Co.  
Sole Proprietors & Distributors for the  
U.S. & CANADA. CLEVELAND, O.

### NOTHING BUT GOOD RESULTS.

Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often. —W. H. RAYMOND, Prop. Belmont Park Stock Farm, Belmont Park, Mont.

### USED 10 YEARS SUCCESSFULLY.

I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it. —C. C. CRAMER, Training Stables, 390 Jennings Street, New York City.

Sole Agents for the United States and Canada.  
**The Lawrence-Williams Co.**  
TORONTO, ONT. CLEVELAND, OHIO.

## HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. De KALB,

De Kalb, Iowa

### YEARLING JERSEY BULL CALF

Sired by a son of Eminent and out of an imported cow with authenticated test of almost 600 lbs. butter in eleven months. This is a show calf and of good size. Price \$125.

DAVID C. DILWORTH  
Buckeye, Wash.

### REGISTERED AYRSHIRE BULL FOR SALE.

Age 3 years. Write for particulars and price.

F. O. HALL Sedro-Woolley, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

### HOPE FARM GUERNSEYS

Some very choice youngsters for sale at reasonable prices; pure bred, prize winning stock. Write for particulars.

H. B. DOUGLAS, Prop.  
Ferndale, Wash.

### REGISTERED JERSEYS

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. TAYLOR  
Montesano, Wash.

### JERSEY BULL FOR SALE

Eminent Inland Empire, out of Eminent and Golden Fern's Lad, which has over 60 daughters in A. R. O. class. A splendid animal, having made good in my herd. Price reasonable. Full particulars on request.

NELS JORDAL  
R. F. D. 2 Lynden, Wash.

**HOLSTEIN BULL**—Sir Yakima Korn-dyke, sired by Korn-dyke Hengerveld DeKol, for sale. Full particulars and price on application. L. F. KRASSIN, R. F. D. 2, Snohomish, Wash.

## Crystal Springs Farm

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

GUY C. CHAPMAN,  
Pomona Wash.

**GOOD REGISTERED BERKSHIRES**—Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.

### Oregon Collie Kennels

Established 42 years. Choice Puppies (either sex) Breeding Pairs Bitches in whelp and stud dogs for sale. Send 2c stamp for illustrated catalog.

C. D. HAIRN  
Shadeland Farms  
R. F. D. 2  
Amity, Oregon



thoroughly disinfected and all danger of spreading the disease removed, the farm is quarantined by the local authorities in the same way in which it would be for a contagious human disease. This local quarantine prevents the visit of individuals or the transfer of any produce or animals from the farm to other farms. In some cases, because human beings can carry the disease to other herds, the State authorities have prevented children on infected farms from attending school. In other cases, as in Illinois and Ohio, the State authorities have closed the stockyards until they can be cleaned and disinfected.

The first effort of the Department is to discover and segregate all animals sick with the disease or that have been exposed. To this end, the Federal and State inspectors are now tracing up, through bills of lading and railroad records, all shipments of live cattle which have been made during the last sixty days out of any of the infected or suspected districts. The herds of animals so shipped are located and immediately examined by veterinarians. In this way the presence of foot-and-mouth disease has been discovered in various places in the present wide area now under Federal quarantine, which includes Massachusetts, New York, Ohio, Pennsylvania, Indiana, Illinois, Maryland, Michigan, Wisconsin, and Iowa. Similarly, the numbers of all cars in which animals have been transported from these districts have been obtained, and these are being located and thoroughly cleaned and disinfected.

Following the imposition of a general Federal quarantine, and the killing of actually infected herds, comes a farm-to-farm inspection of the entire quarantined area. Later, when

it becomes clear that the disease has been localized, it will be possible for the Federal and State authorities to free from quarantine all but the actually infected counties or districts, and allow the uninfected territories to resume interstate shipments of stock.

#### History of Present Outbreak.

The present outbreak first appeared in southern Michigan. How it was introduced there is not known. Shipments of diseased hogs from this place which passed to Chicago are believed to be responsible for the infection of the pens in the Union Stockyards. Once the yards became infected there was danger that every shipment of live stock through Chicago to other parts of the country might pick up the germs of the disease and spread the contagion. These shipments, composed largely of feeders and stockers, were sent to farms for fattening and did not remain in Chicago long enough for the disease to show itself in external symptoms. Some of the cattle, carrying the contagion, after shipment develop external lesions and this accounts for the outbreak of the disease in States as far apart as Iowa and Massachusetts. For this reason a large force of Federal inspectors is now running down every shipment and examining the animals or herds at their place of delivery.

At present the chief danger lies in the possibility of there being concealed sources of infection. Every effort is being made by State and Federal authorities, not only to trace suspicious shipments, but to convince farmers of the seriousness of the disease and the extreme ease with which it is communicated, and to urge upon them to report at once to State or Federal authorities all suspicious cases of sore mouths or lameness.

## STOCK

### LIVE STOCK FOR PANAMA PACIFIC EXPOSITION.

#### Many Silos Erected.

Mr. Robt. Burt, who is looking after the live stock interests for the Panama-Pacific Exposition for Washington, states that 10 carloads have already been promised by pure-bred stock raisers. Others who desire to enter should lose no time in making application for space. The freight money appropriated by the State Commission for transporting live stock and for premium purposes has been limited to a fixed amount.

Mr. Burt stated to the Northwest Horticulturist & Dairyman that he had closed sales of 128 Weyerhaeuser silos, besides the large number sold direct from the factory. Considering the numerous silo firms which have been selling in this state, Washington farmers are making rapid progress in the best method of producing and preserving their forage crops. With scarcely an exception they are putting in good silos; the only kind giving satisfaction.

### WOODLAND BERKSHIRE DRESSED TEST.

The Berkshire barrow exhibited at fairs at Centralia and Puyallup, by the Woodland Farm of Lacey, Wash.,

gained over one pound per day for 8 months. He was farrowed February 28th, put on the block October 28th, with a live weight of 242 pounds. The dressed weight was 215 pounds, a loss of only 11.15 per cent.

This was a cull boar and not considered good enough to keep for foundation stock. As a weanling pig, says Mr. Miller, he was not very growthy. Next year the proprietors of this farm intend to prepare some good barrows for the fairs for further tests and request some of the raisers of other breeds to do the same. With proper preparation it might be possible to block and dress such hogs at the fair, after being passed on by judges as live hogs, then compared as dressed out. The proprietors of Woodland Farm request hog breeders to express their ideas on this proposition in the columns of this paper.

#### BABY BEEF PRODUCTION.

#### Alfalfa, Ensilage and Corn Profitable Feed.

The Nebraska Experiment Station has just issued Bulletin 143 on "Feeding Baby Beef," at the North Platte Substation. This bulletin gives the results of fattening five lots of calves on different forage and grain rations during the winter of 1911 and 1912

## Registered HOLSTEIN and High Grade CATTLE

Our choice high grade cows now coming fresh are in condition to give excellent satisfaction to dairymen during the winter season, as they are acclimated in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

**H. S. ROYCE**

Savage-Scotfield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

#### SOMETHING NEW THAT IS OLD

Scotch Blood Balm is an old Scotch remedy for Rheumatism and Kidney Trouble. Scotch Blood Balm has never been advertised before, having been sold for the past ten years on the recommendation given by those who have used it. Hundreds in the State of Washington have been cured after all other treatments have failed. Scotch Blood Balm is strictly vegetable and is guaranteed under the pure food laws by the Scotch Blood Balm Co., Serial No. 13596. No alcohol or opiates used. \$3.00 for six weeks' treatment with guarantee of relief or money refunded. Sold direct from factory. Address

SCOTCH BLOOD BALM CO., 835 So. Fife St., Tacoma, Wash.

**GUERNSEYS** — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.

#### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**

Route 1 Everson, Wash.

and a duplication of this test during the following winter.

The calves were spring calves put into the feed lots shortly after weaning in the fall and fed until after the middle of June. They were about fourteen months old when sold. The average weight on the market was about 850 pounds. The average selling price was \$68.45 per calf.

The rations fed were as follows:

Lot 1—Prairie hay, corn 9 parts, and cottonseed cake 1 part.

Lot 2—Alfalfa, prairie hay, and corn.

Lot 3—Alfalfa, silage, and corn.

Lot 4—Prairie hay, silage, and corn.  
Lot 5—Prairie hay, silage, corn 9 parts, and cottonseed cake 1 part.

The net profit per calf including the profit on hogs fed with the lots was as follows:

Lot 1—Fed prairie hay, corn 90 per cent, and cottonseed cake 10 per cent. Profit per calf, \$17.05.

Lot 2—Fed prairie hay, alfalfa, and corn. Profit per calf, \$20.28.

Lot 3—Fed alfalfa, silage, and corn. Profit per calf, \$22.21.

Lot 4—Fed prairie hay, silage, and corn. Profit per calf, \$11.77.

Lot 5—Fed prairie hay, silage, corn 90 per cent, and cottonseed cake 10 per cent. Profit per calf, \$13.32.

The ration composed of alfalfa, silage, and corn gave the fastest and cheapest gains and the most profit per calf. The ration of alfalfa, prairie hay, and corn ranked second. The two rations containing alfalfa gave much better results than any ration not containing alfalfa.

Silage had a much higher value when fed with alfalfa than when fed in rations without alfalfa.

Cottonseed cake was profitable when fed in rations that did not contain alfalfa, but was not profitable when fed in rations with alfalfa.



A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.

**THE E. N. PEASLEE CO.,**  
Clarkston, Wash.

### Purebred Durocs

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

Write today.

We buy and sell large quantities of choice hams and bacon. Quality is our motto.

**AUGUSTINE & KYER**  
115 First St. Seattle, Wash

### Poland China Boars

Have some good ones 4 months old, also boar pigs of good breeding. Gilts all sold.

**F. C. BRUCE**  
Grandview, Wash.

### O.I.C. Hogs

#### English Shire Horses

Shire stallions 1 to 3 years old. Write for prices. **A. L. PIERCE,** Granger, Wash.

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English

### REGISTERED DUROCS

(Immune to Cholera)

All ages for sale, male or female, from prolific families.

Shamrock Wander heads the herd. Shamrock Daisy farrowed 12 pigs. Shamrock Rose farrowed 14 pigs. Selah Agness farrowed 16 pigs.

Write for prices.

**A. H. IRISH,** Wapato, Wash.

**FRESIAN-HOLSTEIN CATTLE**—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. **N. P. SOR-ENSON,** Bellingham, Wash., R. F. D. 2.

**FOR SALE** — Jersey bull calf, grandson of Noble of Oakland which has many tested daughters, and sold for \$15,000. Dam Allie Reeves, out of Register of Merit breeding. Write for price and further particulars. **JOHN H. CHAPMAN,** Tacoma, Wash., R. F. D. No. 2, Box 69.



## THE CARNATION SALE

The sale of pure bred Holsteins on the Carnation Farm near Tolt, on the 12th of November, was attended by an eager lot of buyers, and well handled by the auctioneers Messrs. Gue and Linbarger. The females averaged \$266 each, the males \$106 each, most of the latter being calves under six months of age, all out of good blood on both sides but from untested dams. The average price for the 71 head sold was \$225, and the record price for one cow \$425.

The Carnation Stock Farm is under the management of E. A. Stewart who is also president of the Pacific Coast Condensed Milk Company, and it is the policy of the management to promote the dairy industry in a substantial manner by procuring purebred cattle in districts where desirable quality may be obtained, then to acclimate them at the Carnation Stock Farm and offer to dairymen at their own prices. The plan is to conduct a public sale twice a year, the second to be held in April and the fall sale next November. After selling 71 head there remains 260 pure bred cattle on the farm all well up as producers, both in quality and quantity. The aim is to keep the foundation herd from which cattle are sold, in the 30 to 33 pound class.

Mr. Stewart is practically demonstrating the value of pure bred sires which are out of the high record dams, and hopes through the educating influence among farmers covering a few years, to help put the dairy industry on the high plain for which this country is peculiarly well suited.

## GREENBANK HERD ENLARGING

During the last month the Greenbank Herd at Greenbank, Whidby Island, Wash., has been enlarged by the addition of four registered high record cows selected from two noted herds in the northern part of the State. The Greenbank herd has now 60 head all registered and the mature cows are all well up near the top as producers, a good proportion being in the 30 pound class and a few over that mark.

There are now 9 young bulls from which selection may be made. These are out of dams producing 29 pounds butter or more per week, and will serve to grade up any herd of common cows enabling the owner to realize a higher average production from his future herd at a very reasonable cost.

## HOGS ON ARTICHOKE PASTURE

Mr. J. R. Miller of the Woodland Stock Farm, Lacy, Wash., states their field of artichokes is serving an excellent purpose to carry over their stock hogs through the winter. About 80 head are pasturing on 3 acres of artichokes from November to April. The lot of hogs being pushed for gain is fed about 4 pounds mixed ground grain per day in addition to the artichoke pasture.

## CURING MEATS ON FARMS.

Salt, sugar or molasses, baking soda, and a little saltpeter are the only ingredients necessary, together with a clean hard wood barrel or large stone jar.

Ordinarily the curing of meat should be begun from 24 to 36 hours after the animal is slaughtered. This allows sufficient time for the animal heat to leave the meat entirely, but not sufficient to permit decay to set in.

Once the meat is tainted, no amount of preservatives will bring back its proper flavor. On the other hand, if salt is applied too soon, obnoxious gases will be retained and the meat will possess an offensive odor. It is also impossible to obtain good results when the meat is frozen.

Weigh out the meat and allow 8 pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer 5 or 6 inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top. After the package has stood over night add, for every 100 pounds of meat, 4 pounds of sugar, 2 ounces of baking soda, and 4 ounces of saltpeter dissolved in a gallon of tepid water. Three gallons more of water should be sufficient to cover this quantity. A loose board cover, weighted down with a heavy stone or piece of iron, should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would spoil in a short time.

## STATE FAIR STOCK EXHIBITORS.

Boar 2 years old or over—Donald C. Bunn, Prosser; board 18 months and under 2 years—J. A. Simonson, North Yakima; boar 1 year and under 18 months—C. O. Merwin, Mabton; boar 6 months and under 1 year, and boar under 6 months—Clark Bros., North Yakima. Sow 2 years old or over—D. C. Bunn; sow 18 months and under 2 years—Clark Bros.; sow 1 year and under 18 months—Chester Miller, North Yakima; sow 6 months and under 1 year—F. R. Steele, Grant's Pass, Ore.; sow under 6 months—Clark Bros. Champion boar and sow—C. O. Merwin; best boar bred by exhibitor—Clark Bros.; best sow bred by exhibitor—C. O. Merwin.

## Chester White Class.

Edward Schoel, of Albany, Ore., took first on boar 2 years old or over, boar 18 months and under 2 years, boar 1 year and under 18 months, sow 2 years old or over, sow 18 months and under 2 years, sow under 6 months, herd over 1 year and herd under 1 year (bred by exhibitor), get of sire, produce of sow, champion boar and sow, champion boar and sow bred by exhibitor, best barrow and best pen of barrows.

H. L. Fletcher, of McMinnville, took first on boar 6 months and under 1 year, sow 1 year and under 18 months, sow 6 months and under 1 year, and herd under 1 year.

A. L. Pierce, of Granger, took first on boar under 6 months and all the special prizes offered by the O. I. C. Chester White Record Association.

## Hampshires.

Kelly & Williams, of Sunnyside, took first on boar 18 months and under 2 years in the Hampshire class, all other awards going to J. M. Fruits, of Joseph, Ore.

## SHEEP ON SMALL FARMS.

Ewes can be purchased at the present time at prices ranging from \$3.00 for common, inferior sorts, to \$7.00 for good fairly well-bred ewes. For farm purposes the black-faced ewes are more popular than the others, although good results can frequently be obtained from the white-ones. In buying ewes, be sure that



## PRODUCE MORE MILK AT LOWER COST

## Shady Brook Dairy Feed will do it

The interest you must pay on your investment in land and stock is the same whether your cows produce much or little. The expense of running your dairy is the same whether your production of milk is high or low.

The only way to make sure of a profit at the end of the year is to handle your herd in such a way as to produce more milk at a lower cost.

Shady Brook Dairy Feed will do this. It is a feed with the necessary elements for big production.

Send today for the booklet on FEEDING—a post card will get it.

H. P. PRESTON, Eitel Bldg., Seattle, Wash.

Seattle Dealers include Chas. H. Lilly Co., J. L. Craib, Galbraith, Bason & Co., Lehman Bros. Tacoma Dealers include Kenworthy & Son, J. B. Stevens, Coast Trading Co., Hill Cereal Co. Everett, Western Produce Co. Snohomish, Snohomish Feed Mills, Herman Friese, Mgr. Bellingham, Bellingham Flouring Mills Co., F. J. Farley, Whatcom Flour & Feed Co., Nezperce Roller Mills. Olympia, James Brewer.

## Garden City Milling Co.,

Seattle  
Eitel Building  
H. P. Preston, Mgr.

Portland  
Board of Trade Building  
Walter Scott, Mgr.

they stand well on their feet, have good straight backs and good mouths. Ewes that have broken teeth, or teeth that are badly worn down should not be bought. As a rule, a sheep has one pair of permanent incisor teeth when it is one year old; two pairs when it is two years old; and three pairs or a full mouth when it is three year old. A full mouthed ewe, if the teeth are in good condition, can be used for breeding with good results although she may be as much as five years old. Never buy a ewe that has a broken mouth, that is, with teeth that have been broken off or lost.

None but a purebred ram should be used. It is not necessary to have a show animal, but a strong vigorous buck is essential. Shropshire, Oxford, Southdown, and Hampshire rams sire excellent mutton lambs and these breeds are recommended for the farm states. A suitable ram can be bought for \$8 to \$20.

In the farm states, the farmers will find it to their best advantage to regard the wool from the sheep as a by-product, and direct their principal attention to the production of lambs, and mutton for the table.

A new and very complete sale list of a splendid lot of Berkshires has just been issued by Chas. M. Talmadge, Newport, Wash. The illustrations are most excellent, including the model hog house, the picture which every hog raiser should see and it may be obtained free of charge by writing Mr. Talmadge and the mention of this paper.

## Duroc's Profitable

My 7-month Durocs made world record gains this season. The short feeding time is where the profit is derived and there is money in hogs in the Northwest. Do you want a few youngsters, then write today.

JNO. B. PETERSON,  
Mountborne, Wash.

## FARRAR'S LIFE OF CHRIST.

A book which should be in every home, is sent postpaid including one year's subscription to this paper for \$1.25. Northwest Horticulturist & Dairyman, Box 1604, Tacoma, Wash.

## COMPLETE ELECTRIC LIGHT AND WATER SYSTEM ON THE FARM.

During the past year Mr. Frank Poole, whose home address is R. F. D. 3, Tacoma, has installed several complete water and electric light systems for those living in the rural districts of Pierce county, and which are now giving excellent satisfaction. The plant is composed of the Kewanee pneumatic tank, a deep well pump, gasoline engine and an electric light system. The engine pumps the water and in some cases operates the dynamo at the same time, and it only takes a few hours' run to produce sufficient water and electricity to suffice for from 24 to 48 hours. The engine is also used in some cases to run the cream separator, and could be used to run a wood saw.



## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### EGG LAYING RATION

By "ration" is meant the daily allowance of feed given a fowl or the flock.

The "balanced ration" is defined by Henry's Feeds and Feeding as "A combination of farm foods containing the various nutrients in such proportion and amount as will nurture the animal for 24 hours, with the least waste of nutrients."

When applied to the laying hen the ration may be said to be "balanced" when a variety of feeds have been so accurately compounded as will fully nourish the body, make the egg and supply the necessary bulk without any waste of nutrients.

The laying hen requires a ration in which the protein, carbohydrates and fat bear to each other the relation approximately of 1 to 4.5, that is to say, to one pound of protein there should be four and a half pounds of carbohydrates and fat.

### Birds Balance Ration.

The fowls will instinctively balance their own ration more accurately than it can be otherwise done. To do this it is necessary that the feeder make available to the flock a variety of feeds. There ought not to be less than three kinds of grain in the scratch feed and three kinds of by-products of the grains in the dry mash mixture. Also green stuff, grit, shells, bone and charcoal should be provided. There is no one grain that will do alone for the reason that all of the nutrients required to make the energy, flesh and the egg are not contained in a single variety of feed in the right proportion, hence economic considerations demand a variety of feeds.

### A Model Ration.

There are many good rations that may be easily compounded from the variety of feeds that are listed in the feed table given here. Some are simple and some are complicated. Both kinds when properly fed will bring good results. The following simple ration and system may be safely adopted for winter feeding a flock of 100 hens.

1. Early in the morning 5 to 6 pounds of scratch food, consisting of equal parts by measure of sound wheat, corn and oats to be buried in dry litter 6 to 8 inches deep.

2. Sour milk, also pure water in separate vessel.

3. Green feed such as kale, cabbage, green grass and the like.

4. A dry mash consisting of a mixture of equal parts by weight of coarse bran, ground oats, corn meal and wheat middlings, and ten per cent. of beef scrap, fed in a hopper to which the fowls have access afternoons only.

5. An evening feed of 8 to 10 pounds of a mixture of scratch feed early in the evening.

6. Grit, granulated bone, crushed shells and charcoal fed in a hopper available at all times.

7. A feed of fresh green cut bone twice a week will prove advantageous. It is greatly relished by the birds and adds to the variety. Cooked lean meat when available, may be substituted for the beef scrap. Birds on the good range, of course, will gather

the necessary green feed. During the moult add 20 per cent. of oil meal to the dry mash or feed sunflower seed, preferable in the head, unthreshed. These feeds will materially aid in the growth of the new plumage. Sprouted oats may be substituted for the whole oats.—Western Washington Experiment Station.

### SPROUTED OATS FOR POULTRY

Coast farmers find sprouted oats an excellent poultry feed as it is rich in protein, succulent and is usually moderate in price. Even this year is cheaper than wheat and may be used liberally in the ration. Quite a number of poultry farmers in the coast section sow the oats covering it slightly with earth or leaves, it soon sprouts, even during the winter months and is much relished by the poultry which are maintained in good laying condition.

Another method is to sprout the oats in heated inclosures, sprouter fixtures being on the market for this purpose.

Clean and sound oats are soaked in water overnight in a pail. The next morning flats are filled to the depth of about 2 inches and put into the sprouting closet. The oats should be thoroughly stirred, several times a day for the first few days until sprouts have become from a half to three quarters of an inch long.

The matter of prime importance in growing the oats successfully has been found to be sufficient moisture. The tendency at first is to use too little moisture. The oats should be kept quite wet. The aim here is to keep condensed moisture standing on the glass doors which form the front of the closet at all times. In order to do this it is found necessary to wet the oats three times a day. This is done with an ordinary greenhouse sprinkling can, with very little expenditure of time or labor. As the oats grow the flats are moved to different positions in the closet. The taller the green material gets the nearer the flats are moved toward the floor, because the growing grain then needs less heat. This procedure leaves the desirable places in the closet for the grain just beginning to sprout, where high temperature is needed.

The oats are fed when they are from 4 to 6 inches in height. They are fed at the rate of a piece of the matted oats and attached green stalks about 6 to 8 inches square for each 100 birds per day. In feeding, this 6 to 8 inch square piece is broken into smaller pieces and scattered over the pen, so as to insure that all the birds shall have an opportunity to get some. Fed at the rate indicated, this material has never caused any bowel trouble among birds.

This manner of treating oats is more to obtain a tonic food than as basis in the feed ration, so that where there is plenty of green feed available, the oats can merely be soaked or covered slightly under the unfrozen ground surface.

### EGGS BY PARCEL POST.

Eggs can be marketed successfully by parcel post and frequently secures

## THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

### EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES  
SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK.  
Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.

THE TANCRED FARMS.

KENT, WASHINGTON.

## HENS+SPROUTED OATS=EGGS



Hens like cows must have green feed both winter and summer for best results.

GREEN SILAGE OR MILK SPROUTED OATS OR EGGS

No feed for eggs has ever been produced that equals the Sprouted Oats.

To get great quantities of sweet, crisp sprouts, buy a **DOUBLE QUICK GRAIN SPROUTER**

The Perpetual Poultry Silo

Sprouts in 24 hours. Grows 2 inches daily. Makes 2 to 4 bu. feed from one of grain.

Pays for itself quickly. Thousands in use. Has changed many an expensive flock into profit payers. Made in 6 sizes from

Close-to-Nature Company, Front St., Colfax, Iowa. A few hens to 1000.

It is the experience of leading farmers in Western Washington the past year that sprouted oats is very effective for egg production. Used as a leading part of the poultry ration the cost of eggs is kept at the minimum figure. A crop is thus easily turned into cash.

The Oat Sprouters are sold by

**Poole's Seed & Implement Co.**

1507-9 Pacific Ave.  
TACOMA, WASH.

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL  
Puyallup, Wash.

## EGGS OR CASH

Directions for getting hens into good laying condition in shortest time possible is given in every package of our Herculean Strike Breaker. Sold by dealers, or write to manufacturer for literature, etc.

E. H. ROMBERGER

Sta. F.

Seattle, Wash.

## Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. F. ALWARD  
Orting, Wash.

a better price for the producer and a fresher article for the consumer, demonstrated to the satisfaction of the experts in the U. S. Department of Agriculture. The Department conducted tests that covered a period of five months. At the end of that period it came to the conclusion that the parcel post was of particular value to the man whose flock was too small or who lives too far from express service to permit him to ship his eggs in the regular commercial case which hold 30 dozen eggs.

In the course of these experiments the Department shipped 9,131 eggs in 466 lots. Of these 327 or slightly less than 3.6 per cent were broken, but only 209 or slightly less than 2.3 per cent were absolutely wasted. The other, though broken, could still be used. The percentage of breakage, moreover, will be greatly reduced when the employees of the Post Office become more accustomed to handling such fragile matter.

The larger the shipments that the producer can arrange to make, the

## DUCKS

### The Best In White Runners

WE ARE NOW OFFERING FOR SALE

### Drakes, Trios & Breeding Pens

Bred from the Best American Strain

Write for prices and booklet

E. E. BLOOMFIELD

Hillhurst, Wash.

Box 22D

## COCKERELS PEDIGREED for EGGS

From Trapnested

S. C. White Leghorns

and

Barred Rocks

Day-old Chicks and Hatching Eggs

Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

Dept. H

HADLOCK, WASH

## EGGS and BABYCHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

FRED A. JOHNSON

518 35th St., Tacoma, Wash.

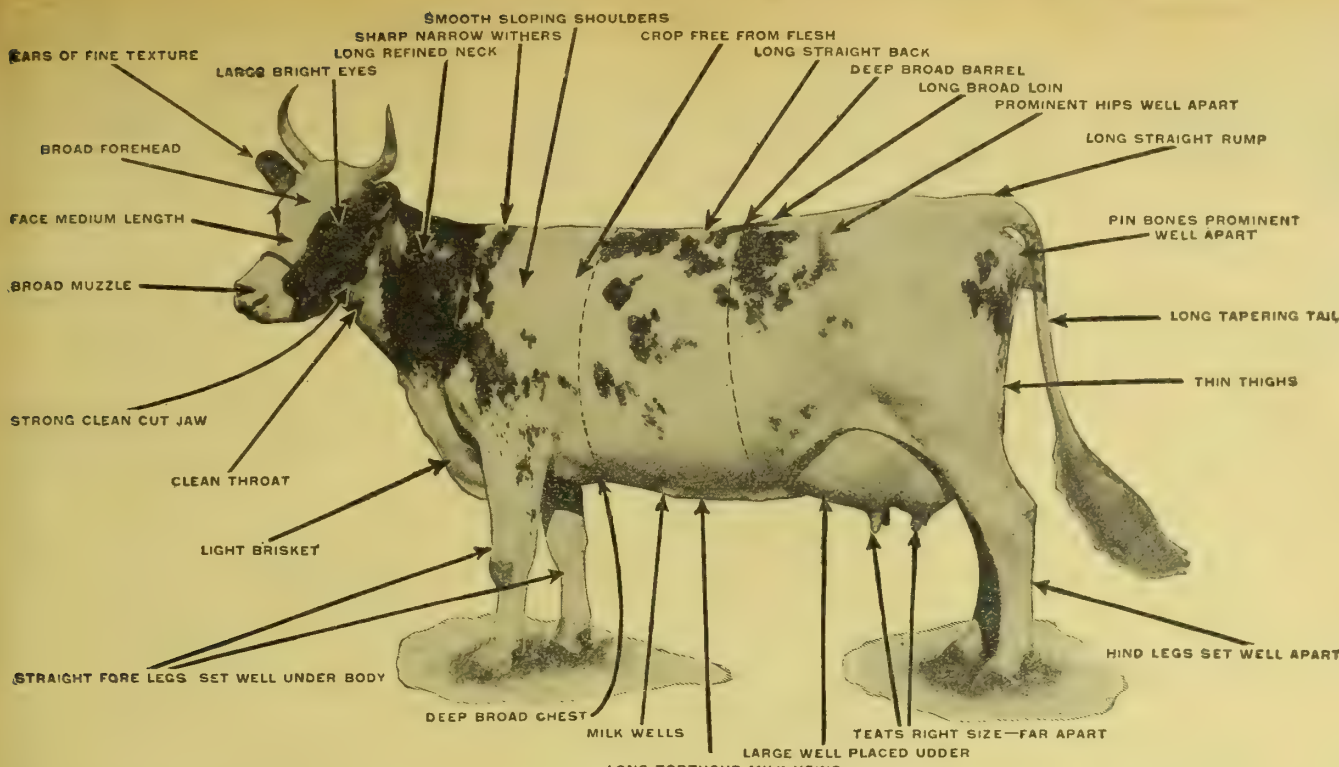
READERS are requested to send information to us pertaining to the best methods of practical co-operation. N. W. Horticulturist Box 1604

less the cost. Within the first and second zones of the parcel post service, a package costs five cents for the first pound and only one cent for each additional pound. Ordinarily eggs weigh about 1½ pounds a dozen, which with the additional weight of the wrapping and container, would make a package of a dozen eggs weigh between two and three pounds. The postage on this would be 7 cents. If another dozen eggs were included in the package the postage would not be more than 9 cents, or 4½ instead of 7 cents a dozen eggs.

To the value of the eggs and the cost of postage must be added the cost of the container and the wrapping. For two dozen eggs this may be estimated at 8 cents. With postage at 9 cents, it would, therefore, cost 17 cents to market two dozen eggs, or 8½ cents a dozen. By shipping in 10-dozen lots, it is estimated that the marketing cost can be reduced to 4.7 cents a dozen.

Where the container can be used





Features of a good dairy cow prominently indicated. This is an excellent chart for those also, who are buying high grade dairy cows which have no recorded butter fat production or pedigree.

more than once, this cost can be of course be somewhat reduced. Large sized containers will stand from two to four trips, smaller ones three to five, so that it will pay the producer to induce his customer to return the containers periodically. The postage required for this is of course deducted from the bill for the next shipment.

#### COCKERELS FROM KNOWN RECORDS

In the case of dairy cattle, extremely high prices are now paid for sires whose dams and grand dams on both sides are in the class of 30 pounds per week or average production of butter fat.

Will the record production basis in measuring value become the rule with poultry in connection with a good standard type?

Much painstaking work has been done with the trap-nesting, a method not practical in every poultry yard, but of value for those who are establishing high record flocks. Following out this plan, C. Westergaard, calls attention to the fact that station experts tell us that the laying qualities are transmitted by the male rather than directly through the female. Our own work, he says, so far points to the same conclusion. Thus, we find that our pedigreed pullets do not show any marked improvement over their sisters. However, when we get our pens headed by pedigreed cockerels from our heaviest layers we shall be very much surprised if we do not note an improvement in performance in the next generation of pullets.

One very important point in this connection to which we would like to add double and triple emphasis is this fact: That by using carefully pedigreed cockerels we are sure that we are not breeding from males with 80-egg hens for their dams. There is considerable danger of doing that very thing, as too frequently some of the best lookers make the worst records.

And on the other hand we will defy any expert or founder of so-called systems to be able to pick the best layers in a flock by any mere physical

tate to grant that such systems are very valuable checks in building up a flock where one has not the time to attend the trap-nest. As an instance, will say we have a 250-egg White Leghorn hen which has a wry tail and a straight comb. Aside from that she is a splendid looking bird and of necessity must be vigorous in order to carry on her work.

If it is true that the laying qualities of hens are transmitted through the male, which the experts tell us, then the roosters is a whole lot more than half the flock. Accordingly, one can afford to pay liberally for a pedigreed bird, which conforms also to standard requirements.

### Facts and Figures

#### THE BULL TRACTOR

On another page is advertised the Bull Tractor, a machine now in extensive use among farmers of some of the middle states. It takes the place of horses in plowing, harvesting, hauling and has been used to operate threshing machines, grade roads, pump water for irrigation and does the work of stationary engines as for sawing wood, running the cream separator, feed cutters or any other belt work.

The large single bull wheel stands five feet high with a steel rim face of 12 inches, on which are placed either cones or bars as preferred. To it is attached the gear and over its engine side and top is placed a heavy sheet iron casing to protect the engine from dust as well as the operator from danger. It has a leveling wheel by which the frame is adjusted to any required position. In front is a 28 inch wheel which serves the double purpose of supporting the frame and at the same time automatically following the furrow for guidance in plowing without any required attention from the operator.

The cost is extremely low considering the efficiency, durability and economical cost of operation. It has the very minimum amount of gearing and wearing part so that cost of replacing the worn out pieces is not a heavy item. Complete description and specifications may be obtained from the Bull Tractor Company at

806 East Pike St., Seattle, Wash., by writing them and mention this paper.

#### ELECTRIC LIGHTING ON FARMS.

By C. W. Chandler, of Chandler-Dunlap Co., Seattle.

There is really nothing very complicated about the home lighting system. A pumping station, which consists of an engine, pump, controls and water mains, have the same relative equipment as a complete lighting plant, with its gasoline engine, dynamo, switchboard and wires.

Electricity flows through the wires in much the same way that the water flows through the mains. The electrical current, which flows thus, is measured in units called amperes. The dynamo generates these amperes, which are forced through the wires by an electromotive force designated as volts. This current, however, in passing through the circuit meets with a certain amount of resistance, and this resistance is called an ohm. The theory, therefore, is that in conducting electricity through a wire of a certain size it requires one volt of electromotive force to pass one ampere of current through one ohm of resistance, on exactly the same theory that it requires a certain amount of pressure to force a certain volume of water through a pipe to a distance of, say, one hundred feet. The greater the distance it is desired to carry the water, the more pressure will be required to send it there.

The most common and efficient method of driving a dynamo is by means of a belt and pulley, or a silent chain-driven device, which can be detached instantly, and the engine used for other purposes when it is not necessary to run the dynamo. In some cases, however, it is practical to operate the generator by means of a friction pulley, placed against the fly-wheel of the engine. This is true, however, only with a dynamo capable of generating sufficient current for about 15 or 20 lights.

As most of the gasoline engines now in use on farms cannot be utilized for direct-connected generating

sets, it is believed that the most simple and reliable method is by means of either the belt and pulley, or the silent chain and drive.

The switchboard is the medium through which the current from the dynamo to the battery and from the battery to the lights is controlled and diverted to its various uses. This board usually consists of a slab of marbled slate, the size depending on the number of switches required to operate the system. The better grade of boards are also equipped with a voltmeter and an ammeter, and on some boards with a combination of the two. These meters are most essential and their functions are to measure the pressure and amount of current being generated by the dynamo when it is charging the batteries, or when the current is being taken from the batteries after the dynamo has stopped generating. The voltmeter indicates the pressure or voltage, and the ammeter the amount of current passing in the circuit, either into the battery from the dynamo, or from the battery to the lights.

The latest type of switchboard is now equipped with an instrument called an automatic cut-out or circuit breaker. This instrument is what is known as an underload breaker, and its only function is to break the circuit from the dynamo to the batteries when for any reason the dynamo has stopped running, or is not running properly.

#### WOOLLY APHID REMEDY.

When the woolly aphid occurs above ground it can be destroyed by a light swabbing of alcohol, gasoline or kerosene, or if numerous by a spraying of tobacco-soap, such as is given for green aphids. The underground form can not be effectively reached and is consequently most dangerous. Kerosene emulsion, sulphur-lime or an abundance of tobacco dust applied to the roots have been recommended, but give only partial benefit. Plowing and cultivation to force the roots down are thought to be helpful since the aphids do not thrive much below a foot. Northern Spy trees are remarkably free from attack, and such stock would prove valuable in a badly infested district. The woolly aphid is too delicate and weak to force its way through the soil, but it will work along cracks and roots and thus spread through the orchard or nursery row. To prevent branch infection from below the trunk may be banded with equal parts of rosin and castor oil melted together and applied on burlap or cotton strips, or if in a dusty district where this method would be inapplicable, it has been suggested to pack around the trunk of the tree a good layer of sand through which the aphids can not crawl.

A. L. MELANDER,  
Entomologist State College, Pullman,  
Wash.

Mr. H. S. Royce returned recently from a trip East, having attended the National Dairy Show at Chicago, which he says surpassed in quality anything previously attempted. He is having shipped out 90 choice young Holsteins which have been on pasture in Wisconsin during the past summer, to replenish his herd from which numerous selections are being made by dairymen from all parts of the Northwest.



# The BULL TRACTOR \$495.<sup>00</sup>

F.O.B. Pacific Coast Points

## What the Bull Tractor Is

A three-wheeled machine; two in a hard smooth furrow, and one on the stubble.

One of the furrow wheels guides the machine when plowing, relieving the engineer of that responsibility.

Has a leveling device by which operator can readily level tractor when on side hills.

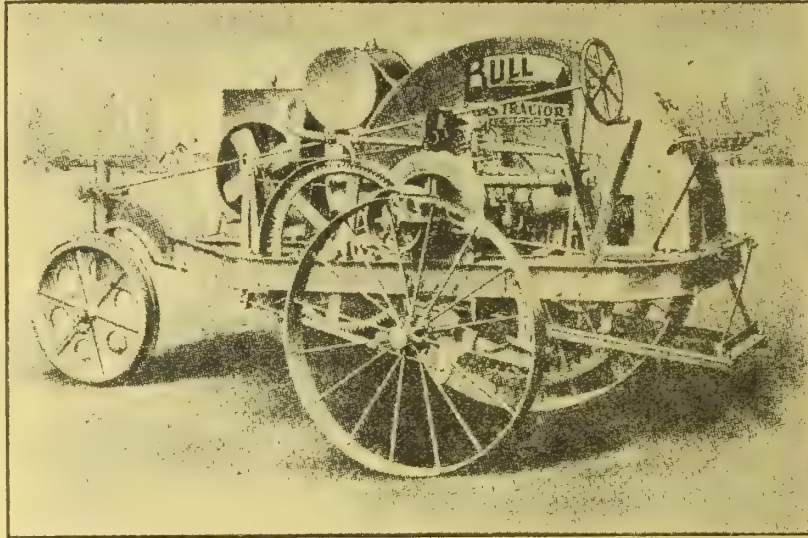
Has but five working gears. One of these is a roller pinion.

Has but one drive wheel, thus eliminating equalizing gears.

Has but one main drive gear, which will last during the life of the tractor.

The motor is two-cylinder, four-cycle, water cooled type, and no better motor on the market today.

Call or write and arrange for demonstration to see this wonderful tractor in actual service. Full information and particulars cheerfully given. Good territory open, districts or counties, for live agents and dealers. Write or wire Dept. H.



## What the Bull Tractor Does

Delivers 12 h. p. at the belt, 5 h. p. at the drawbar, and is designed to do the daily work of 4 or 5 ordinary horses when properly operated under favorable conditions.

Travels somewhat faster than horses, and continuously.

Never gets tired.

Costs nothing for harnesses.

Costs one-half as much for gasoline as for horse feed, and does not eat when it does not work. Gets your work done in time. It is no longer a question of expense only in doing your farm work, but it is a question of getting it done.

Pulls Plows, Seeders, Harvesters, Mowers, Drills, Discs, and then grinds feed, saws wood, or does any stationary belt work on the farm, and is used for pulling stumps, to grade roads, hauling logs, etc.

## HUGHSON & MERTON, Inc.

MANUFACTURERS AGENTS

806 East Pike St. SEATTLE, WASH.

LOS ANGELES, CALIF.

SAN FRANCISCO, CALIF.  
530 Golden Gate Ave.

PORTLAND, ORE.

# ARE YOU BUYING DAIRY COWS?

Yes, Dick, I am always in the market for good ones that are priced right, because you see dairymen can't get too many of the 30-pound class, and they are just beginning to realize it.

And do you have to go East to get them, Billy?

No, at least not until I have attended the

## SECOND ANNUAL PACIFIC International HOLSTEIN SALE

at Portland,  
Oregon,  
December  
11th and 12th  
where  
150 Head

of very fine young cows, heifers and bulls will be offered at buyers' own prices. The cows and heifers are bred to the best bulls of known records according to the Holstein Association, and the quality is way up.

Do you mean to say you can get as good young bulls here as in the East?

Yes, and the Eastern breeders are realizing that fact. When the papers of one noted bull calf in the Pacific Northwest were recorded it was discovered he had dams, grand-dams and great grand-dams of higher average producing records, on both sides, than any other bull living, an Eastern breeder immediately offered \$5,000 for him. You see the Pacific Northwest is so well adapted to dairying that with ordinary care we are raising many high producing cows and naturally we are getting some males whose breeding is backed by these high records.

Do you really think we can depend on getting bulls of the high record class at this sale, Billy?

Yes, Dick, there is a bunch of good ones to be sold. I can't remember all their records, but one 2-year-old is out of a 31-pound production cow, and his sire has 85 per cent. of the breeding of King Segis Pontiac Alcartra, the \$50,000 bull. Others are sired by bulls whose dams have world records as young cows, but to get a complete list you better send to Geo. A. Gue, Ridgefield, Wash., who is managing this sale, and ask him to send you a catalog. Then take time to look over the breeding of each animal to be offered, carefully.

Do you know some of the consignors?

Yes, Dick. Among them are the Monroe Company, Spokane. You remember their winnings and records of production at the Portland Show last year more than proved their claim of quality. Albert Johnson, Scappoose, has stock in this sale. Like his neighbor, P. A. Frakes, he doesn't have any but high producing stuff. There is A. C. Mills, who took a herd east one year and captured most of the ribbons at two leading shows. Then Wm. Bishop, who with world record milk

producers, said that unless dairymen produced better cows than they do east we are not taking advantage of natural facilities. E. B. Marks, who makes his breeding in quality truly a "Holstein Home." Hollywood Farm; over 90 cows of their milk herd A. R. O. class. W. K. Newell, always breeding from known records. Stickney & Barnard. Hugh Nesbit, J. C. Roberts and Manager Geo. A. Gue are all consignors to this sale.

Surely, you have said enough. I will be there and bring several of my neighbors. I will also tell them about the excursion rate you mentioned.





# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-seventh Year

TACOMA AND SEATTLE, WASH., DECEMBER, 1914

No. 12

## SILAGE CROPS OF VALUE

Experience from Filling to Feeding  
From an Address before the Wash-  
ington State Dairymen's Associa-  
tion. By Donald McInnes,  
Dengeness, Washington

To fill a fifty-five ton silo with wheat and vetch, or oats and vetch, or oats and peas the entire cost to me, which includes everything from plowing the ground to filling the silo is \$1.65 per ton. This of course means the cutting of the ensilage I have no doubt that in many instances it can be put in much cheaper than this. The year prior to last, I put it in considerably cheaper on account of having a much better crew. Possibly if corn could be sufficiently ripened in all parts of the State it would make the best silage crop we could raise, for the reason that it is rich in carbohydrates and would fit in nicely to feed as an adjunct to our clover, vetches, and alfalfa. If put

into a silo too green, it will develop too much acidity and make an unprofitable dangerous feed for dairy cows. I have thought that this might possibly be overcome by letting it lay a few days after cutting before putting into the silo. In Washington we have a choice of a number of good crops for silage, some of these are clover, alfalfa, oats and peas; oats and vetch, fall wheat and vetch, and a general mixture of fall wheat, winter oats, barley and vetch, under later methods all these are cut when putting in the silo, but this is by no means necessary although the chances of having good silage is much better with the cut than the uncut owing to the closer packing and consequent exclusion of air. As to the feeding value of these various crops, opinions differ. I should place corn first, if sufficiently matured, and the other in the order in which I have named them but to place in this order I should require red clover to be fairly well matured

otherwise we will find if we go from well matured corn silage to rather green clover silage a decided drop in productiveness of the herd will take place. Alfalfa makes a very good silage crop but apparently must be fed soon after putting in, otherwise it turns very dark and seems to develop an offensive flavor. I can scarcely speak too highly of oats and peas as a silage crop; first from its feeding value and secondly from the fact that the softness of the straw permits it to pack closely. Fall wheat and vetch has both an advantage and disadvantage, as a silage crop, the advantages lie in the fact that if sown early in the fall it will be ready for the silo prior to the regular hay season, and on good land will make a fairly good second crop, it also grows a stiffer straw than oats and is not so liable to lodge, the disadvantages lie in the fact that owing to the stiffness of the straw it does not pack down and exclude the air as well as would be

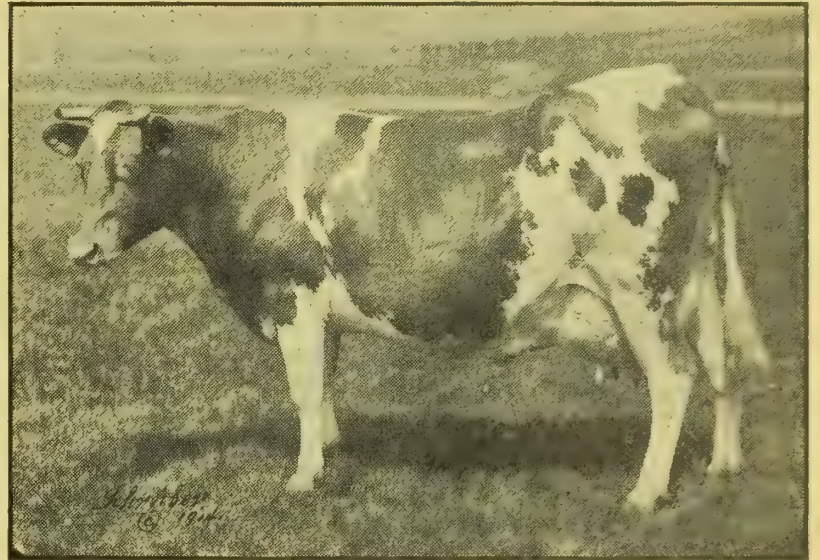
wished, but if extra care is taken in tramping it makes an excellent silage crop and a heavy one.

The next, and one of the most important phases of making silage is to know when to cut and should water be used or not when filling. After close observation and some experience I have arrived at the conclusion that the grasses such as clover and alfalfa, which when cut will pack close and practically exclude all the air it is not necessary or even advisable to run water on, unless it is too ripe or from unavoidable accident it has been impossible to put it in until it has become too dry. The red clover I believe should be cut for silage about the time it would be cut for hay. It is frequently cut earlier and in some cases this is a wise policy, for on rich land it is liable to lodge and rot and mold underneath. The early cutting also permits of harvesting a good second crop for hay. But in all ordinary

(Continued on Page 260)



Holstein Chimacum Wayne Boone.



Guernsey May Rilma.



Ayrshire Lily of Willowmoor



A Famous Jersey.

These cows represent the four leading dairy breeds, and are world famed producers. Notice the general similarity of shape of the great dairy cows



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

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A Merry Christmas is the greeting  
and a Happy New Year the wish to  
each and all of our readers.

## LARGER CO-OPERATION OF GROWERS.

The fruit growers have held their  
annual meetings in each of the Pa-  
cific Coast States and uniformity of  
action has become the key note. The  
object of endeavor is first for uniform  
laws to create fixed standards of  
methods and of products. The second  
matter of importance is to retain con-  
trol of the fruit crops until passed to  
consumers, allowing a just and fair  
remuneration to all interests con-  
cerned in the business of handling  
them.

## CONTROL OF DAIRY PRODUCTS.

Competitive marketing of dairy  
products in the Northwest is creating  
a dissatisfaction both for the country  
creameries and for the centralizers or  
city creameries and unless proper  
regulations are adopted by concerted  
action on the part of both the coun-  
try creameries will be compelled to  
organize to retain the control of their  
product until it reaches the consum-  
ers. While it may not be the fault  
of any particular firm or person, but  
under present conditions of competi-  
tion the city creameries go into a ter-  
ritory and bid above market price for  
cream in order to get what they want  
—apparently to the detriment of the  
country creamery, and when the latter  
undertakes to send their butter to  
the city markets it is not wanted,  
and must be sold 2 or 3 cents below  
the market, making it a losing propo-  
sition for the country creamery. Later  
on the centralizers suffer by the same  
kind of competition, as the cream  
price is too high for the butter mar-  
ket.

The country creameries can affect  
a strong organization, standardize  
their output to a high point in qual-  
ity, then supply first their local mar-  
kets and afterwards sell in any of  
the large markets or otherwise retain  
control of the goods until passed to  
the consumer. Proprietors of the city  
creameries cannot afford to ignore  
their responsibility in the matter of  
making cream and butter prices fair

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

and just to all concerned.

## MARKETING INVESTIGATION.

Reporting the work of his depart-  
ment to the president, D. F. Houston,  
Secretary of Agriculture, states that  
the Office of Markets has obtained  
much reliable data concerning co-  
operative marketing and purchasing.  
It has demonstrated that co-operation  
in some form is much more prevalent  
in the United States than is gener-  
ally believed. A record of more than  
8,500 marketing associations, of about  
2,700 co-operative and farmers' ele-  
vators, of 2,500 co-operative and farm-  
ers' creameries, and more than 1,000  
co-operative fruit and produce asso-  
ciations has been secured. While the  
survey is not complete, it is reported  
that over a billion dollars' worth of  
agricultural products are annually  
marketed by co-operative and farm-  
ers' associations.

Advantages present themselves in  
the standardizing and packing of prod-  
ucts and in the discovery of the best  
daily market.

Inquiries have been set on foot con-  
cerning market centers, the market  
surplus, the rate of movement, the  
outlets for commodities, the prices of  
specific products by definite trade  
areas, and the possibilities of increas-  
ing distribution in an economical  
way.

Lists of producers, producer organ-  
izations, shippers, and transportation  
agents and officials from whom infor-  
mation on specific perishable prod-  
ucts may be secured are being com-  
piled. For example, the records show  
that the number of points from which  
commercial shipments are known to  
originate for certain specific products  
are as follows: Strawberries, 900;  
peaches, 1,800; tomatoes, 600; cab-  
bage, 1,700; onions, 1,500.

The business practices of the enter-  
prises have been carefully considered,  
and the results of investigation are  
being tabulated and formulated. At  
the earliest possible moment the re-  
sults will be incorporated in cir-  
culars and bulletins.

To show what sometimes happens  
in this commercial age with reference  
to production and marketing: During  
the present grass season, for example,  
Chicago has received Mexican, Can-  
adian, and Florida cattle at about the  
same time. Steers raised in California  
by an Oregon operator have been  
shipped through Denver to Omaha and  
their beef sent to points on the Aa-  
lantic coast. Hogs raised in Illinois  
and sold at Indianapolis have been  
slaughtered at Boston and a part of  
their cured bacon shipped to Los An-  
geles. Michigan dressed veal calves  
expressed to South Water Street com-  
mission houses at Chicago have been  
returned to the identical shipping  
points from which they came to fill  
orders from local retail markets.

## Co-operative Extension Act.

The recent agricultural extension  
act is of vast significance. It is one  
of the most striking educational meas-  
ures ever adopted by any Government.  
It recognizes a new class of students,  
composed of men and women working  
at their daily tasks on the farm. The  
Federal and State Governments take  
the adult farmer and farm women, as  
well as the farm boy and the farm  
girl, as their pupils. The measure  
provides for co-operation between the  
States and the Federal Government.  
It guarantees a co-ordination of the  
forces of the two jurisdictions. It

places the brains of the two great  
agencies in conjunction, eliminates  
waste and friction, and insures effi-  
ciency. Providing for an initial ap-  
propriation of \$10,000 to each State,  
to be expended through the land-  
grant colleges in co-operation with the  
Federal Department of Agriculture,  
and each state, all have accepted, is  
to be appropriated an amount equal  
to the increase above \$10,000.

This sum must be expended in di-  
rect instruction in the field, as the act  
is very specific in prohibiting its use  
for teaching or erecting buildings at  
institutions and in limiting the pro-  
portion that can be expended in print-  
ing bulletins. If we add to this fund  
the direct appropriations to the de-  
partment for educational extension  
work and the excess appropriations of  
the several States, says the Secre-  
tary, it probably will be found that  
the Nation will be expending in 1922-  
23 and thereafter, without any further  
legislation, a sum in excess of \$10-  
000,000 or \$11,000,000.

## RURAL CREDIT EXTENSION.

Rural credit extension is being care-  
fully considered from many angles at  
the present time. Congress is not  
likely to enact any new law until  
the present new banking act has been  
tried out. Under present conditions  
banks may loan on improved real es-  
tate for a term of five years.

States may enact laws for co-opera-  
tive banks. Several have already  
done so, and no doubt measures will  
come before the Legislatures of the  
Pacific Northwest the present ses-  
sions. There can be no harm in co-  
operative land banks. In many cases  
the system will give the farmers an  
opportunity to finance themselves ac-  
cording to substantial business meth-  
ods, while reducing the cost of mak-  
ing loans would serve to decrease the  
cost of extended credit.

Otherwise the total amount of credit  
extended both principal and interest,  
is a local problem. There necessarily  
is considerable red tape concerning a  
loan from a co-operative land bank.  
In some cases the regular established  
banks would be more flexible, extend-  
ing accommodations with less hesi-  
tancy and no doubt they will con-  
tinue to serve, helping to finance  
farmers, but the co-operative land  
bank system under a good law will no  
doubt have the influence of making  
more money available for the dairy  
farming and other rural affairs.

## HOLSTEIN COW TILLY ALCARTRA.

This famous cow has made a new  
world's record of 30,452.6 pounds milk  
and 951.3 pounds fat, the first cow  
that ever produced over 30,000 pounds  
in one year. Her board bill was val-  
ued at \$149.07. The items were: Oats,  
barley and bran each 1828 lbs.; 1208  
lbs. corn ensilage; 681½ lbs. dried  
beet pulp; 3226 lbs. corn ensilage;  
10,122 lbs. hay, and 15,140 lbs. beets.

## SILAGE CROPS OF VALUE

(Continued from page one.)

crops where good silage is wanted,  
don't cut too early, otherwise you  
are robbing Peter to pay Paul.

In all of the grain crops, except  
corn I should recommend the use of  
water, for the reason that I believe  
these crops should be in the dough  
before cutting and if left until that  
stage the straw is drier and will not  
crush down as closely as at the  
earlier stages, consequently to ex-

clude air, which is the prime re-  
quisite in good silage, it is advisable  
to run in water. I have never yet  
seen an over-ripe grain crop spoil  
when treated in this manner, but I  
have seen crops put in too green  
spoil by developing too much acidity.

A curious and interesting circum-  
stance in regard to silage came under  
my observation. Two years ago  
quite a number of silos were sold in  
our county, in fact so many more  
than had been expected that the mills  
furnishing them could not deliver on  
time, and what made matters worse  
when they finally did arrive was the  
fact that practically none of the  
farmers knew anything about how to  
put in cement foundations or set up  
the silos. One man that I knew  
quite well had a piece of oats and  
vetch, or rather, oats, vetch and Cana-  
dian thistle, the thistle predominating,  
which he intended to cut for silage.  
Before he had his silo up, the road  
overseer notified him that unless the  
crop was cut he would prosecute him  
for a violation of state law for al-  
lowing Canadian thistles go to seed,  
so he had to cut it and it was then  
by all known rules for silage far too  
ripe, he immediately raked into wind-  
rows, and was compelled to let it  
lay until it was dry and brittle and  
looked no better than straw. I made  
a personal examination of it and  
pronounced it impossible for silage.  
He, however, hauled it, cut it, and put  
it in the silo pumping water on liber-  
ally. I requested him to call me up  
when he had fairly started feeding,  
he did so and I went and saw it, the  
stuff, we will for courtesy call it sil-  
age, smelled good, looked good, and  
the cows ate it greedily and most  
important of all, were milking fine  
on it.

This dry silage crop brings up the  
following question, have we been  
hauling from the field and handling  
at great expense a lot of water that  
could be more advantageously and  
economically supplied in another way,  
and with just as good results?

This year he siloed fine first cutting  
of alfalfa and red clover which is  
coming out of the silo bright and  
nice, but he assures me that his  
cows are neither eating it as greedily  
nor milking as well as on the over  
dry oats, vetch and Canadian thistle.  
If any of you here present have land  
badly infested with Canadian thistle,  
don't be discouraged, just reverse the  
present order of things, viz., instead  
of working your head off and worry-  
ing how to kill and destroy this ag-  
gressive and persistent foreigner, let  
him work for you by helping make  
you a silage crop thereby assisting  
in swelling your bank account rather  
than depleting it in fighting him.

## IS A SILO NECESSARY?

By W. A. Linklater.

A great many new silos have been  
built during the past season by west-  
ern Washington dairymen. In the  
main the writer believes these will  
prove satisfactory and help materially  
to solve the succulent feed problem.  
It is unusual to meet a dairyman who,  
after using a silo a few years, discou-  
tinues its use. The use of a silo real-  
ly greatly simplifies the problem of  
maintaining a constant supply of  
succulent feed and this every dairy-  
man knows is closely related to milk  
yields and profits.

Silos are in use in some sections



where corn is not or cannot be grown. While acclimated corn can be grown in most localities in Western Washington there really are some places where late spring frosts make corn growing uncertain. In these sections rye and vetch, oats and vetch, clover and grass are siloed successfully.

Whether a silo is worth while where corn is not grown is an open question but that corn can be profitably grown and used for winter feeding without the use of a silo the writer does not believe. The whole plant, stalk and grain, must be utilized to make the crop profitable and shocked corn weathers and moulds so quickly that it will commonly be unfit for feed by December 1st. Again corn stalks cannot be sufficiently cured to be stored indoors without moulding, and mouldy feed is dangerous feed for any kind of stock.

A silo seems more necessary for summer feeding than for winter feeding. By means of kale and roots a good winter supply of succulent feed can be provided but if pasturage is short during July, August and September a continuous supply of succulent crops is hard to provide and the labor involved in the soiling system is greater than required where the silo is used. A crop of fall-sown rye and vetch, oats and vetch, clover or grass put in the silo in late June provides an ever-ready feed to supplement the summer pastures.

True, some dairymen get along quite well without a silo but it requires a carefully worked out and operated system of cropping. The best system of this kind that the writer is familiar with from the standpoint of feed supply and saving of labor is the following: Sufficient kale is grown to supply the dairy herd from October till February 15, or March 1. The cattle are then pastured on September-sown rye and vetch for about six weeks when they are turned on the hay meadows till early May, and the rye and vetch crop is allowed to stand for hay. In May cattle are turned on to the regular pastures.

The winter and early spring pasturing provided for under this plan is only practical on well-drained land. Again no provision is made against short pastures. Even under this plan summer silage or soiling crops are needed.

For the past two seasons at the Western Washington Experiment Station we have provided succulent feed for our dairy herd as follows, and have found the system very satisfactory, especially as we have very limited pasturage: Sufficient kale is grown to provide succulent feed for the herd from October till January, then mangels are fed for about two months when the feeding of corn silage begins. The silo is filled with fall-sown oats and vetch about July 1st and the feeding of silage is continued all summer. When the silo is filled with corn about October 1st the feeding of kale is begun. Mangels could be omitted from this system but are grown because of their suitability for poultry and hog feeding.

Good corn, hay or grain silage are just as good dairy feed as kale, mangels, or any other of our common succulent feeds. This has been proven at this Experiment Station during the past year. No reasonable and well informed person will object to

milk produced by cows fed good ensilage as part of their ration.

Some enthusiasts advocate siloing kale, turnips, and such crops. This is not practical. The only crops that should be put in a silo are crops that can not be stored for feeding as satisfactorily any other way. Kale should be left in the field till ready for feeding. Root crops if they must be harvested before time for feeding had best be stored in root cellars or pits. When the season is favorable for hay making, hay crops had better be made into hay than silage. There is sufficient merit in the silage system and enough purposes served by the silo without using it impractically.

### EXPERIENCE WITH CLOVER ENSILAGE

Clover ensilage, in my opinion, is the surest and best ensilage that we can produce in this section of the country.

In the first place clover is a sure crop.

Second, it will under ordinary conditions produce from ten to twelve tons or more of green feed per acre.

Third, about the fifth of June, it is ready to cut, at a time not favorable for cutting or curing hay on account of frequent showers or rain; consequently those not provided with a silo must leave their clover uncut until it is too far advanced to make the best hay. If cut from the 15th to 20th of June, it will produce a second crop of one and one-half to two tons per acre of the best quality of hay. When handled in this way you have two good crops and if cut for hay you have only one crop of not so good hay, for the best value is in the clover before it reaches the barn.

#### Method of Filling Silo and Cost.

In 1914 I hired a large Ohio cutter No. 17, which was run by steam power, and able to easily handle 60 tons or more in 10 hours; this with a crew of fourteen men and five teams, paid at the rate of 25c per hour, and 35c for the cutting the cost comes to approximately \$1.10 per ton. In other words, a silo 16x30 feet holding 117 tons, for the ensilage costs about \$130.

The value of the clover will depend

altogether on the cost of your land and what the same land will produce. Ten acres filled my silo, which was a yield of approximately 12 tons per acre. Under ordinary conditions clover for ensilage can be bought for less than \$2 per ton, making the ensilage cost \$3.10 ready to feed.

#### Method of Feeding.

My cows are mostly large cows, Holsteins. I am feeding ensilage twice a day with a ration of 40 lbs. a day or 20 lbs. at each feeding per cow, at about a cost of 6 cents.

After four years of feeding ensilage in this country I am convinced that I cannot duplicate this with any other kind of feed obtainable in this section for being a palatable and wholesome feed for stock.

It makes a good feed for brood sows and any growing stock.

I do not believe in feeding ensilage alone. Cattle should have all the good hay that they can consume. Besides the 40 lbs. of ensilage, my cattle eat from 15 to 20 lbs. of hay.

The lasting quality of the ensilage will depend a good deal on the filling. All air must be excluded from it or it will spoil. When filling go into the silo yourself and with the help of two or three reliable men pack it together. Continue to tramp the ensilage about 20 minutes each day, for at least two weeks after filling and you will have good results.

N. P. SORESEN.

Route 2, Bellingham, Wash.

## Uniform Horticultural Laws

From an Address by M. McDonald,  
Member Committee on Uniform  
Legislation Before a Meeting  
of the State Horticultural Society.

The American System of Government being divided into Federal, State, County and Municipal Legislative Bodies, with the initiative and referendum in many of the states delegating to the people themselves the power to make and unmake laws,—brings before us the question of how shall we approach the construction and administration of Horticultural Laws that will be uniform in their operation, giving adequate protection to the fruit growing and allied interests of the different states, while at the same time being just and fair to all interested parties.

Shall we, as now, continue multiplying county, state and federal laws,

each in operation in the same state at the same time, and often in conflict with each other; sometimes their operation and enforcement left to inspectors whose appointment may have been due to some political preference, and without any previous experience or training for the serious technical work in hand, with power to condemn and destroy property without due process of law, thereby sometimes causing great financial loss to the owner of the property; and in other cases allowing injurious insect pests, fungus or bacterial diseases to be introduced because of lack of proper training and knowledge on the part of the Inspector? Or, shall we approach this big problem from the viewpoint of the best law that can be constructed, which should be good enough for all, and that nothing less will satisfy the fruit growing interests; that it shall be uniform in its

operation, and be enforced by competent trained men, operating under a central state authority and working harmoniously in co-operation with the Federal Horticultural Board?

At present, we have innumerable State and County laws bearing on this important subject,—scarcely any two of them alike in construction or operation, and often in conflict with each other. Most of these laws have been modeled with California State Laws as an original basis, but they have been altered and changed, until today it is almost impossible for an ordinary person to ship any farm product from one County or State to another without either first having an attorney look up the statutes of the state or county into which you are going to ship the article, or take the chance of violating some law or county ordinance.

To a person not accustomed to shipping fruit or vegetables, this may

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Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

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SEED OATS

SHADELAND

A famous variety which we recommend to all planters

for fall or spring planting. It matures early, is heavy yielding, generally doubling the production of common oats. To be sure to receive the genuine Shadeland Seed Oats, always buy direct from our Portland store.

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CORN

After careful tests and experiments, we recommend Hartman's Dent and Premium Dent as splendid corn for this territory. Yield prolifically, mature rapidly, splendid feed, both green and as ensilage.

OUR GENERAL CATALOG listing Diamond Quality Tested Seeds sent free on request. Ask for catalog number 50.

Portland Seed Co.

Portland,  
Oregon.





appear an extreme view, but I can assure you that shippers of these products find conditions as stated, and it would appear that unless some united effort is put forth by this and other Pacific Coast states to secure some effective, uniform law, state laws and county ordinances will continue to multiply as time goes on until it will be hard to transport agricultural products from one county to another; because other states and counties in other states, taking their cue from California, are considering more drastic legislation. Some of these laws are conceived in a spirit of retaliation. This is not as it should be, for what is for the interest of one county is for the interest of another, and in a larger way what is for the interest of one state, is for the interest of all. Especially must this be true in the working and operation of Horticultural Laws in the abatement and eradication of insect pests, bacterial and fungus diseases.

Inspection, thorough and effective, at the point of origination, by men not alone qualified to inspect, but by men having knowledge of the rules, regulations and requirements of the law at point of final delivery, will do a great deal to clear up the situation, so that the seller will not be put to unnecessary expense and loss through his ignorance of the laws; and that the purchaser may not unnecessarily be exposed to danger from some insect pests or diseases in section where there may be no law or inspection. Remember, injurious insect pests and diseases do not obey the law of arbitrary boundary lines.

Of what possible value can a county or state ordinance be for the protection of the fruit growers when such boundary line runs through a thickly settled agricultural country, with different rules and regulations on each side of this fixed boundary line? Nothing short of a uniform law, with uniform rules and regulations for its enforcement by competent trained men under the supervision of some central authority in each state, supplemented by a most rigid federal quarantine enforcement at all ports of entry and points of access from foreign countries, will fully protect the horticultural interests of any state.

All state and federal laws should be so harmoniously adjusted that sectional quarantine restrictions will be under the control and supervision of the federal authorities; so that certain infected areas when necessary may be quarantined without taking into consideration county or state lines.

This work should be carried on through the co-operation of both state and federal authorities so that there will not be a duplication of officials, thereby eliminating a chance for friction and misunderstanding which usually follows when two sets of officers have authority over the same work, but are working under different heads.

If we should agree that through the enactment of a Uniform Law in the different states, all of our Horticultural interests can best be fostered, conserved and protected from the ravages of insect pests, bacterial and fungus diseases, we are again confronted with the problem of how to bring about this result; and from

the great number of state laws and county ordinances, how are we to select and agree upon a law that would be uniformly fair and just, and at the same time meet the requirements necessary to give the proper protection to all sections of the state?

In attempting to answer this question, I may say that the nursery branch of Horticulture, on account of the nature of its business being of an interstate character, has for many years felt the great need of uniformity in our laws, and have from time to time at their conventions discussed the feasibility of this work, but it was not until the joint meeting of the Pacific Coast and American Associations in Portland, June 17-20, 1913, that a concrete plan was evolved for bringing this matter to the attention of the Horticultural authorities and others.

Copies of all the laws of the different states have been collected; letters have been written to Horticultural authorities, officials of Horticulture Societies, Agricultural Colleges and numerous interested parties asking for their advice and co-operation in the matter, all of which have given their most unqualified support for the principal of uniform legislation. Besides, the committee has met with the National Association of Horticultural Inspectors, whose chairman, Prof. J. G. Sanders of Wisconsin, is working on a draft of a Uniform Inspection Law. This, together with a compilation from a digest of the laws of the different states is in the form of a proposed Horticultural bill.

We believe this bill has ground work upon which a Uniform Horticultural law can be framed that will, when in operation, with such changes as may be deemed necessary upon further study and investigation, fully carry out the principle here outlined.

#### LOGAN BERRY EXPERIENCE IN 1914

By Aspinwall Bros., Brooks, Oregon,  
Growers of Loganberries and  
Loganberry Plants.

During the summer of 1914 we employed about 250 people to harvest our fifty acres of loganberries. The season started about June 15, and lasted until July 25. The yield was about four tons of fresh berries to the acre. We shipped eleven carloads of the fresh berries in refrigerated express cars to the markets of the middle west and netted a little over 3c per lb. for them. The balance of the crop was evaporated. It takes 5½ lbs. of the fresh fruit to make one of the evaporated. On ac-

count of the sluggishness of the dried fruit market we still have some of the evaporated berries on hand but they will all be gone long before we have any from the next years crop. There was considerable experimenting done with loganberry juice this year and with such success that I believe it is destined to take more of the berries than all of the other avenues combined. The Agricultural College, Corvallis, can supply anyone with the particulars regarding its manufacture.

ASPINWALL BROS.

#### CANNING AND DRYING.

At the apple show at Spokane, T. E. Sickles stated that growers in the Yakima Valley shipped 1000 cars of peaches this season at a net loss to the growers and that from 500 to 700 cars more dropped to the ground and were never utilized at all.

Some years ago the idea of peach tree "fillers" in the apple orchards was adopted and made the practice by a considerable number of the Yakima Valley fruit growers and now they have learned that system of orcharding was a delusion and snare.

The peach crop is over done, it is an expense to pull out the trees and the apples trees are not so well shaped as where the peach tree fillers are not used. But for all that there is something radically wrong with the Yakima Valley fruit growers. They had the large crop, they had a good canning plant, driers were available and the banks contained an ample supply of money to finance substantial canning and drying operations. The difficulty lies in the want of a get-together movement headed by a competent manager. In the Yakima Valley as in the Wenatchee, and the Hood River districts, there are about half a dozen shipping associations, each pulling for itself, besides the large individual shippers also attempting to "paddle their own canoes."

The lack of concerted action is both wasteful and expensive. May this year's experience be of value in setting on foot a movement, in all the leading fruit district of the northwest, for harmonious plans and work on the part of local interests representing the fruit handling business.

Industriously fruit growers have attained to a very satisfactory stage. It is the local business part—particularly in the matter of canning and drying which needs to be harmonized. There was pocket-book pressure this last season. Has it been sufficient to cause improvement? Next year will tell.

## AGRICULTURE

The Basis of  
Prosperity

### Clover Seed Growing for Western Washington

So far as I know no clover seed has ever been hulled in Western Washington. Yet clover seed growing here will not be an experiment, for in the Willamette Valley, with substantially our climate, clover seed growing is a great success. Becoming interested in an additional crop for my peas-potatoes-pork rotation, I wrote to many Oregon farmers and to professors in our State College and all replies tended to confirm my first

opinion that every farmer in Western Washington who is engaged in general farming should raise some clover seed every year.

Oregon farmers write me that they get anywhere from \$40 to \$150 per acre; save all spring work; have the threshing at a different time from grain threshing; find soils becoming enriched; need fewer horses and less farm help.

This reads like a strong showing;

## PLANTING for BEAUTY and INCREASED VALUE

The first impressions of a prospective buyer for any farm is influenced largely by the appearance of the buildings and their surroundings in the way of trees, plants, the lawn and how things generally about the place are kept in shape. Trees and ornamental plants properly placed are not only attractive but positively increases the estimated value of any farm.

We have made it a business and study for many years to grow adaptable trees and ornamental plants for many specific purposes. From comparisons of beautiful home places made we are in position to offer helpful suggestions in selection and arrangement of trees and plants for the most pleasing effects. Thus to help beautify and enhance the value of your place is our business and our service is at your command.

We have this season, an unusually fine lot of all the staple deciduous shade trees adaptable to western conditions, such as American Elm, Soft Maple, Norway Maple, Sycamore Maple, Ash, Beech, Birch, Catalpa, etc., besides the exceedingly rapid growing trees such as Carolina Poplar and Black Locust for the dry hot regions where quick shade is so much desired.

In shrubbery we have a fine assortment of the choicest varieties in Althea, Barberrry, Calycanthus, Current, Forsythia, Honeysuckle, Jap Quince, Jasmine, Spirea, Syringa, etc., besides a full assortment of all the odd favorite roses, and a large number of the new proven sorts. Send for our catalog or let our salesman show you our list when he calls.

Stock all grown on clean new volcanic ash soil and is well rooted, hardy and fully matured. Transportation charges prepaid to destination on any purchases.

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Salesmen wanted.

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but it seems to be the exact truth.

#### The Work Schedule

In Western Washington we have many rainy days in the spring. Peas are by far our most profitable grain crop, but in order to get large yields peas should be gotten in early. 20 to 40 acres, according to the season, is a "unit" for a man and three horses.



Oats can be put in any time; but peas should be in early, as they do best in cool weather.

This year I sold \$3,000 worth of peas and pork; but I could have cared for another \$1,000 worth of clover seed, and \$1,000 worth of potatoes with very little more help. To state it another way, I could have sold \$3,000 worth of peas, clover, pork and potatoes with much less work than I used to produce \$3,000 worth of peas and pork.

Therefore I have seeded down 40 acres to clover, some for pasture, some for seed. So next spring I will have nothing at all to do with these 40 acres till about June 1st, when I will clip may clover; probably cutting it for seed in August, another slack time.

Peas should not be raised on the same field many years in succession, as mustard, blue grass and other weeds grow luxuriantly as soon as the peas "fall." This is the reason why peas are counted the very best of nurse crops—the clover will be three times as large in a field of short vined peas as in a field of oats, for the oats smother the clover until they are cut—which is often in the very driest portion of the summer.

Peas, on the contrary, fall down and wither before they are cut, gradually hardening the small clover stalks.

Owing to special circumstances I have grown peas on the same ground for five years in succession; just as I once grew potatoes on one piece for eight years (getting over 15 tons the last year); but for obvious reasons a rotation is far better.

With the same equipment of horses, machinery and men, a farmer who raises clover seed can handle twice as much land as can one who raises only grain.

#### Fertility

I once saw in a government bulletin that as the average of several investigations, the amount of nitrogen added to the soil of one acre by the roots only of a clover field, was \$22.95. Much additional nitrogen was taken from the air and stored up in the clover hay, say \$9 worth.

I have never seen any authoritative statement, but granting that a bushel of clover seed takes from the soil the same fertilizing values as a bushel of wheat—why the clover seed grower still has left virtually as much fertility as though he pastured his land! 6 to 12 bushels seems the average yield of clover seed; three is lowest I ever heard of and 16 the highest. Eight bushels of grain will not be a great drain on a field.

A man in Idaho who grows 75 acres of clover seed a year tells me he sells his clover straw for the same price as timothy hay; that neither is desirable for cows, but that clover straw (almost a powder) is quite as good as timothy for growing stock.

One of my neighbors who bought a creamery in Oregon tells me that much of the land there had been grained to death; so that it lay idle, not paying even wages for the crops of grain raised. The farmers began raising clover seed and now have not only comfortable incomes, but actually built up their land so that they can raise any crop they wish.

#### Cash Returns.

This of course is the "nub" of

the whole matter. "Will it pay?" is the vital question.

On good soil the record runs up to sixteen bushels per acre for an entire field.

Prices vary as with other crops. Cleanliness is important. Vitality is important.

With clean seed of high vitality the grower can get anywhere from 20c to 35c per pound. It all depends.

When the market price was 16c per pound for ordinary clover, (paid by dealers) I knew one man who sold his entire crop for 30c; another who sold at 20c. Reliability is of special importance in selling seed. At 15c per pound the 60 pounds in a bushel of clover seed would bring \$9.00; and \$18 at 30c a pound.

Of course the beginner would get the 15c, and probably an average crop.

The record crop of 16 bu. at 20c per lb. would bring nearly \$200 per acre; to say nothing of the value of the straw or of the nitrogen in the root nodules.

My correspondents write me that a beginner will probably get about \$50 an acre for a few years till he learns the secrets.

I know a man who is raising an acre of clover in hills. The single plants are three feet apart each way; cross cultivated. He will save seed from the best plants, for heavy yielding varieties.

Some farmers go through their fields removing the weeds. Others have special seed cleaning machines. Sometimes these cleaners are operated cooperatively.

#### Twice as Much Oats.

Year in and out, on all sorts of soils, clover seed and the nitrogen which clover adds to the soil make an acre of clover worth about twice as much as an acre of oats.

#### The One Obstacle.

The one thing that prevents the growing of clover seed is that hulling requires a special machine.

Each clover seed grows in a separate pod; 20 to 150 in a "head."

An ordinary threshing machine will not break open these tiny pods. Hence the clover "huller" has not only the cylinder and concave as in an ordinary threshing machine, but the heads go down to another cylinder covered with sharp teeth about as large and coarse as a wood rasp. This cylinder revolves inside a concave lined with similar rasp-like teeth, about 1/16 of an inch from those of the cylinder. Here the little pods are opened and the seed is then screened out.

A clover huller costs about as much as an ordinary separator; \$600 and up new, and \$150 and up rebuilt.

A neighborhood should have 80 to 100 acres as a starter, 3 to 20 farmers sowing the same spring and going in together to get a huller.

Granting this one thing, there is no reason why the farmers of Western Washington should not make good money growing clover seed.

Here in Whatcom county we formed an organization with P. J. Frack, Ferndale, as secretary, and W. H. Kaufman, Bellingham, as president.

As there will be necessary expenses for postage, literature and halls, we fixed a membership fee of 25c, and hope to have many other neighborhoods organize this winter. Send your name and 25c and keep in touch with this movement.

Clover Seed Growing and Dairying.



## WHEAT LAND

Locations within three miles of any shipping station are worth from \$2 to \$5 more per acre than land of like quality from 10 to 15 miles farther away in the saving cost of haul. Wheat is the sure seller and money maker crop for the next few years. It is a question of getting the land and the good yield of crop.

#### HERE IS AN OPPORTUNITY TO BUY

Over three sections, Nos. 17, 29 and 31, Township 15 North, Range 29 East, in Adams County, Washington, noted for its large wheat acreage, about three miles from Othello. Over half lies beautifully in a valley or draw, and is composed of rich volcanic ash soil; the balance is on a little higher elevation, with soil more of a sandy mixture. On the whole it is an excellent piece of wheat land; most of it could be plowed and seeded for a crop next year.

This will be sold at a very reasonable price and on long, easy terms, either in separate sections or as a whole. It is owned by a company whose members are not farmers and offered at a price which would be cheap for land three to four times the distance from shipping point, and the title is perfect. For price, terms and further particulars, write or call, and mention this paper.

**FORBES P. HASKELL, Jr.**

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## POOLE'S SEED AND IMPLEMENT CO.'S STORE



Showing front view of the building in which is located this well known firm rendering satisfactory service to the dairymen, gardeners and general farmers of this country for the past 25 years.

A dependable place for seeds of the highest germinating quality of all kinds for field and garden is the reputation.

**SATISFACTION GUARANTEED** is their motto.

When ready for seed corn best adapted to the Coast section, write them. In planting corn for ensilage, you can't afford to experiment. A very high percent of the seed should germinate.

Good producing cows and large yields of crops will serve for a prosperous 1915.

**POOLE'S SEED AND IMPLEMENT CO.**

1507-9 Pacific Ave.

TACOMA, WASH.

Clover should be clipped close about June 1st. Up to that time it can be pastured. Also in the fall the clover field will help out. Any dairyman who has not yet put up a silo will find the early and late pasture

very useful.

The clover straw will be greedily eaten by young stock or by cows not giving full flow of milk; being about equal to good timothy hay. Clover for seed is cut when stalk is dead



from head down to first leaf, the rest being green. Being ground up in huller is a good thing; but of course clover for hay should be cut before heads are brown.

Of course there are troubles here as everywhere; but if the midge stings the clover so as to unfit it for threshing you can cut it a week or so early and make ideal hay—there is no lost crop.

The chief advantages of raising clover seed may be summed up as:

More money, less work, richer soil, better work schedule.

The sole obstacle is to get 80 to 100 acres seeded at one time, that is for threshing the same year.

We hope to receive the 25c fee from many farmers in Western Washington. I speak of Western Washington especially, because in Eastern Washington and Idaho clover seed growing is already an important branch of general farming.

W. H. KAUFMAN,  
Bellingham, Wash.

### MAKING GOOD SILAGE.

By H. L. Blanchard.

The writer is pleased to respond to the editor's request for data relative to some of the dairyman's problems in Western Washington, and particularly as they may relate to the use of the silo. Only a few years ago the silo was discredited among our dairymen; whereas today the up-to-date dairy farm without a silo is the exception. The dairyman's faith in the silo appears to be fixed and they do not longer regard them as an experiment. Until the last ten years the dairymen of the East and Middle West hesitated to recommend the use of the silo for other crops than corn, but more recently they are becoming to recognize that all of the cereal and legume crops may be satisfactorily stored in the silo as well as corn.

One of the oldest silos in the State is now in use on the writer's farm. With one or two exceptions this silo has been filled every year for the last sixteen years with crops other than corn. Until the last few years there has invariably been quite a percentage of spoiled silage unfit for feed. The fact however, that the much larger percentage was sound and wholesome was convincing that under right conditions there would be practically no loss. The writer long ago became convinced that the dairymen west of the Cascade Mountains would from time to time have for solution many new silo problems that would be peculiar to local conditions. As a community we have learned and are learning to solve many of the local problems, so that now many of our dairymen fill their silos confident of favorable results. More substantial silos are being erected and silage is fast becoming recognized as an indispensable part of the cow's ration for profitable dairying.

Notwithstanding these conditions there is much inferior silage being used for feed that does not bring the results that it should. One of the chief causes of this inferior silage would appear to be along the line of harvesting the various crops too soon, before they reach their maximum feeding value. Insufficient care in the distribution of the material in the silo also is the cause often of poor silage. Either of these mistakes results in more or less spoiled silage, but when

both occur simultaneously a large percentage of the silage would necessarily be spoiled and unfit for feed.

These two chief causes for spoiled silage may be successfully overcome and should be. Immature crops produce sour silage of low feeding value at best. The plant contains its maximum value for silage when its feeding value is about equally distributed between the stalk and the head or grain, which occurs with clovers and grasses when the plant is in full bloom, and with the cereals and legume grains when the seed is in the dough stage. In filling the silo it would appear that in this climate the crop ought generally to be allowed to wilt a little before being put into the silo. It should be carefully and uniformly distributed—both stalk and leaf, and also quite liberally moistened and packed as it is put in. This calls for plenty of help and a system.

It is better to cut the crop going into the silo, however, good silage is being made by putting the crop in whole. This requires more work and care in the distribution of the crop in the silo and heavily weighting down as soon as the silo has become full. There are a number of important objections to putting the crop in whole. The silo will hold about one third less silage than when the crop is cut. It is much harder to store whole without loss. It is harder to get the feed out of the silo when the crop is stored whole. My observations then, would lead me to suggest to the dairymen that they give careful attention to cutting and storing silage crops at the right state of maturity and thoroughly mixing and packing them in the silo.

### FISH FERTILIZERS

In discussing the fertilizer resources of the United States, the Bureau of Soils, U. S. Department of Agriculture, in its annual report for the fiscal year ending June 30, 1914, says regarding fish fertilizers that after investigation the possibilities in the fish-scrap industry of the Atlantic coast, already developed, a study has been made of the possibilities on the Pacific coast, including Alaska. The waste fish and fish refuse approximate annually 120,000 tons and can be made to yield about 12,000 tons of scrap (fertilizer) and 3,000,000 gallons of oil, worth, perhaps, \$1,800,000. A study is also now under way of the possibilities under American conditions of utilizing garbage and other city wastes.

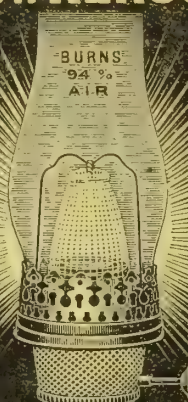
### NEW WASHINGTON STATE MAP

The United States Geological Survey is publishing a series of large State maps in connection with the work of preparing the United States portion of the millionth-scale international map of the world, and the latest one to be issued is that of Washington. This map is printed on the scale of 8 miles to 1 inch and makes a wall map 32 by 48 inches. On this scale the map of the entire United States would be about 20 by 31 feet.

The new map of Washington, which has been compiled under the direction of R. B. Marshall, chief geographer of the United States Geological Survey, in cooperation with Henry Landes, State geologist of Washington, is believed to be the most accurate map of the State ever pub-

## New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE

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**Burns 50 Hours on One Gallon**  
common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

**\$1,000.00 Reward**  
will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin? **GET ONE FREE.** We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one free.

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had never sold anything  
in his life before writes:  
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seven days." Another  
says: "I disposed of 84  
lamps out of 81 calls."  
Thousands who are coming  
money endorse the Aladdin  
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**No Money Required**  
We furnish capital to re-  
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make big money in unoc-  
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Send sample of your soil. Write for prices and Lime Bulletin.

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Seattle, Tacoma, Portland

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We handle all kinds of farm products, making channels between producer and consumer as short and inexpensive as possible. If not a stockholder, write for our prospectus, also our wholesale provision list. State what you have to offer in fruit, potatoes, veal, pork and poultry. Please mention this paper.

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1000 acres of fine land in Eastern Oregon, 8 miles from good town and railroad; 75 acres can be put in alfalfa and irrigated from nice creek that runs through the place and furnishes abundance of water the year around; 400 acres good wheat land; balance of place fine bunch grass pasture. House, barn and outbuildings. Orchard. Price only \$15 per acre. Good terms. A splendid opportunity to go into the hog, cattle and wheat business. Write us if you are looking for a ranch of any kind.

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### I HAVE PULLED 3000 STUMPS

Big Pacific Coast Stumps, ALONE, without horses, powder or digging, with a

### "K" HAND-POWER STUMP PULLER

I KNOW you can pull your stumps with the "K," cheaper, quicker and better than with any other known device.

**WEIGHS ONLY 171 LBS.**

One man easily handles—made of Krupp steel; can't break or get out of order. Simple, compact, developing 48 tons' pull. Pulls any stump that 6-inch steel cable will hold. 200 feet steel cable and all equipment included. Works anywhere. Used by U. S. Gov't in Alaska and by several states and counties.

You can make \$25 each worth \$200 an acre in spare time work. Write today for catalog showing actual photographs of the "K" in use and special money-saving offer.

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Seattle, Wash.

lished and shows in correct position all the principal cities, towns, villages, streams, railroads, etc., and the main political subdivisions.

The map is printed in two colors on heavy calendered paper and is sold by the Director of the Geological Survey, Washington, D. C., at the nominal price of 25 cents a copy.

### TRACTOR VS. HORSE POWER

There is plenty of room for all the good Percherons and draft horses

which can be raised in the next 20 years. The price of horse flesh is constantly increasing, says Douglas Malcom, of the International Harvester Company.

The issue of "Tractor vs. Horse Power" is not supplanting the horse by the tractor, but rather the crying need of the agricultural world for a mechanical power which can do the various heavy operations on the farm cheaper than they can be done with horses. In this country the power



and labor element in raising an acre of wheat is \$5.38; in raising an acre of corn, \$6.99; and in raising an acre of oats, \$4.73. It is believed by the tractor companies that in all of those operations requiring heavy pulling power, such as plowing, disking, drilling, and harvesting, which are essentially short-season jobs, the mechanical tractor, with its tremendous power and the fact that it incurs no expense when not at work, can save money in raising the crop for the farmer who owns it.

### THE FARM INVENTORY.

All good business concerns take a regular inventory of their business. On the other hand, very few farmers keep even a record of their receipts and expenditures, and an extremely small percentage ever think of taking an inventory. For several reasons the farm inventory, properly kept, is one of the most essential features of the business side of the farm operations. The inventory should show all assets, including land and improvements, stock, farm equipment, cash, notes receivable, accounts receivable and everything whatsoever of any value, and all liabilities, including mortgages, notes payable, accounts payable, etc. If the inventory is properly taken the balance between the assets and the liabilities will show the present worth of the individual. This balance compared with the balance of the preceding year will show the net returns for the current year. For example, if my assets January 1, 1915, equal \$14,356.25 and my liabilities equal \$5,231.75, my present worth January 1, 1915, would be the difference, or \$9,124.50. If my present worth January 1, 1914, was \$7,436.50 the net returns from my business for the year 1914 would be \$9,124.50 minus \$7,436.50, which equals \$1,688.00. This gives the farmer the best guide available as to whether he is getting ahead each year.

One general rule may be distinctly used in the value of all items to be sold or to be retained upon the farm. If for sale, place at the market value, whether high or low. If to be retained, place at its normal value for use on the farm. Three illustrations will suffice. Suppose we have 20 tons of alfalfa hay, the usual value on our farm being \$12.00 per ton. Temporary conditions have raised the price to \$20 per ton. If it is for sale we can properly place it in our inventory for \$20. If we have cows and are wise enough not to get scared and sell out we will have to feed the alfalfa and can realize only what it is worth for feed. It will give us a truer indication of our present worth to inventory it at its feed value, for that is all that we are going to realize out of it. Again, suppose we have five brood sows. Temporary demand has placed an abnormal value on brood sows and ours could be sold at 50 per cent. more than they are normally worth. If we are to retain them, they should be inventoried at their normal value. Again, suppose we purchase a new binder. At the next inventory date it would, if carefully handled, be worth within 10 per cent. of its cost for continued use on the farm, while its sale value would be reduced probably one-third or more because it becomes second-hand. The wearing value is the proper one to give in the inventory.

In short, "sale value" for all things

for sale and "use" or "wearing value" for all things to be retained will make the inventory the most useful guide to the farmers' real financial standing.

GEORGE SEVERANCE,  
Agriculturist.

### COUNTY AGRICULTURISTS AND FRUIT GROWERS

From an Address at the Apple Show, Spokane, by Byron Hunter, State Leader of the County Agriculturists in Washington.

At the present time the three northwestern states have approximately twenty-five County Agriculturists. These men are joint representatives of the Agricultural Colleges and the United States Department of Agriculture. These positions are filled by men who were raised upon the farm, who have received a scientific training in agriculture or horticulture, and who have had sufficient experience after leaving school to prove their ability and worth. In placing these men it is our aim to so select them that the experience and training of each man will fit the agriculture of the county in which he is to work. Owing to the wide variation in the agricultural conditions and possibilities in our northwestern states the character of the work that may be taken up in the various counties differs greatly.

One of the fundamental principles in the Farm Bureau work is the "show me" method of instruction. If we can see a thing done we understand and remember it much better. We resort, therefore, to Farm Demonstrations where it is possible to do so.

#### Pruning Demonstrations

In the State of Washington we have four men working in counties where the apple is an important crop. During the pruning season pruning demonstrations are held throughout the orchard districts. Men are gathered together in the orchards in groups of from 5 to 25. Trees of various types and varieties are pruned and the principles of pruning discussed. Many orchards are visited and one or more trees pruned in order to leave a pattern in as many orchards as possible.

In some of the counties pruning schools are to be conducted during the coming pruning season. Each school will consist of from 15 to 20 men. They will go into the orchards and prune under instructions for a week or ten days, that is, long enough to learn the fundamentals of pruning.

#### Control of Codling Moth and Scab.

In Walla Walla valley the codling moth is a serious pest. During the pest seasons the county agriculturists made the control of this insect the leading feature of his work. He carefully studied weather temperatures and hatched out 750 moth cocoons in 9 cages located in different parts of the county. In this way the proper spray dates were worked out and in June the dealers claimed they had sold ten times as much arsenate of lead as they sold during the previous season. The value of this work to the apple growers of Walla Walla county has been estimated at from \$45,000 to a much larger sum.

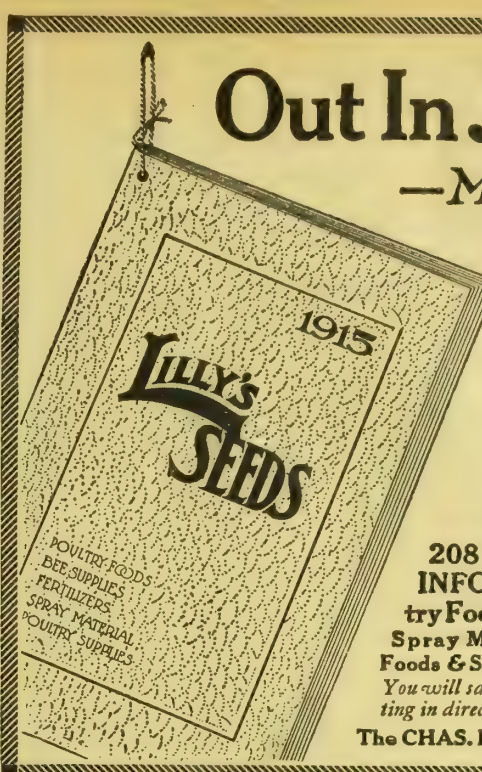
During the season of 1913 apple scab did a great deal of damage in Spokane county. So severe were

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### FRUIT GROWERS

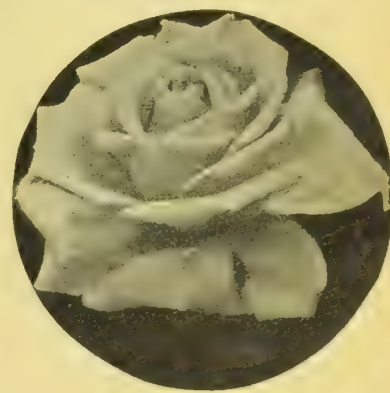
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the ravages of this fungus, I am informed, that not more than 10 to 15 per cent of the crop graded fancy or extra fancy. The county agriculturist began an educational campaign early in the winter. Later on Mr. F. G. Carlyle, a practical grower and a representative of the Spokane Fruit Growers' Company, assisted in the campaign. Together they went from locality to locality holding meetings and telling growers how to combat apple scab. As a result of this work few orchards in the Spokane District had any perceptible amount of scab in them during the season of 1914.

#### Boys Apple Club.

Spokane county has the distinction of having the first Boys' Apple Clubs in the world. They were organized last winter by the county agriculturist, Mr. J. R. Shinn. Each club member took complete charge of a block of 12 bearing trees and did the pruning, spraying, thinning, cultivating, picking, packing, etc. Mr. Shinn has met with the apple clubs from time to time to give them instructions and inspiration. In all probability we will have Boy's Apple Clubs in several counties next season, since the Spokane Clubs served as good demonstrations, each in its respective community.

Soil improvement by means of green manures, such as leguminous crops is a very pressing need in practically every orchard district in the Northwest. Clean cultivation maintains an excellent condition for the vegetable matter of the soil to decay and since no organic matter is added the inevitable result of this practice of orchard management is an infertile depleted soil. Clean cultivation has been practiced in some of our older orchards sufficiently long to show its depleting effect upon the texture of the soil, the growth of the tree, the character of both foliage and the fruit. In the orchard districts the county agriculturists have made a thorough study of this subject and are also encouraging the orchardists to produce alfalfa hay and cash crops between the trees, keep a few good cows, some hogs, and a well cared for flock of hens. Being a representative of both the agricultural college and the United States Department of Agriculture, the county agriculturist brings to his county whatever assistance these two institutions have to offer.

#### ESTIMATING THE CROPS

An important change in the organization of the Bureau's field force, U. S. Department of Agriculture, is announced. The place of State Statistical Agent, of whom there were formerly 47, or one for each State, has been abolished. Their work is to be taken over by an efficient corps of field agents who will devote all of their time to the work of the Bureau. The State Statistical Agents devoted only a small part of their time to the work of the Bureau. Each one of these men will be assigned to a State or to a group of small states. In addition, specialists will be appointed for each one of the more important crops. For example, there is now a crop specialist on tobacco, a crop specialist on rice, and a crop specialist on cotton. These men will devote their entire time to their own particular crop, just as the field

agents will do with the crop production within their own special territories.

#### COUNTY AID TO ROAD BUILDING

With the object of gathering data that will help county and township officers to determine the best way of financing their local road improvements, the Office of Public Roads of the United States Department of Agriculture has just published, under the title, "Highway Bonds" (Bulletin No. 136) an analysis of the economic features affecting the construction and maintenance of highways financed by bond issues.

The bulletin, which consists of 91 pages of text, with a number of maps and plate, gives complete tables of costs of various types of roads and the amounts of bond issues, as the result of inquiries addressed to county officers of all the counties, which brought definite returns from 1230 counties. These led the Office to fix the total amount of highway and bridge construction bonds issued by counties and townships up to January 1, 1914, at \$287,031,018. In addition, the bulletin gives elaborate tables and charts whereby county officers can determine the total cost and annual appropriation necessary for constructing different highways by bond issues.

The investigation shows that January 1, 1913, slightly over \$202,000,000 in bonds were outstanding. During the past three years, county, district and township highway and bridge bonds were voted as follows:

|            |                 |
|------------|-----------------|
| 1911 ..... | \$29,200,022.00 |
| 1912 ..... | 31,793,274.00   |
| 1913 ..... | 50,655,554.00   |

Total for 3 years ....\$111,648,850.00

Up to January 1, 1914, there had also been voted State highway bonds to the amount of \$158,590,000, which makes a grand total of all highway bonds voted and reported to the Office of Roads January 1, 1914, of \$445,621,018, or very nearly a half billion dollars of State and county money expended or to be expended on highway and bridge improvements.

While many counties did not report the term of the highway bond issues, it was found that the mean term for approximately \$47,000,000 issued prior to 1913 was 24.8 years. The issues of 1912 and 1913 which were studied indicated that bonds maturing in 20 years or less, or else retired under the serial payment plan, were more popular than those running over 20 years.

In speaking of bond conditions, the authors of the bulletin state that inasmuch as probably over 80% of local bonds for highways and bridges are still outstanding, the highway bond movement has yet to meet the test of repayment, and that the maximum outlay for the retirement of outstanding highway loans will apparently be reached in about 20 years.

The continued success of highway bonds as a means of road improvement will depend largely, the authors point out, on whether or not the county authorities follow the following principles of sound road financing:

(a) A steady and well administered system of meeting interest and providing for the retirement of bonds on maturity, whether by means of

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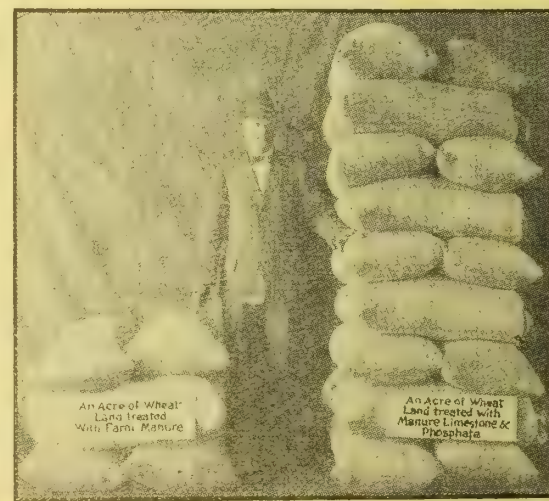
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a sinking fund, by the annuity method, or through serial payments.

(b) The limiting of expenditures for road improvements to sums which are warranted by the actual saving in cost of hauling that the road improvement will effect. In this item may also be considered increased tonnage which follows road improvement.

(c) Expending bond money's only on roads of such a character that a satisfactory share of this money may be regarded as a permanent improvement. This means that the bond issue should not be spread so thin over an exorbitant mileage that the improvement will be largely superficial and practically disappear in a very short time.

This means, also, that a large percentage of the bond issue should go into building a satisfactory and permanent foundation for the road which would call principally for resurfacing repairs, rather than frequent complete reconstruction.

(d) Provision for proper maintenance and repair of a bond-built road throughout the life of the bonds, so that when bonds are retired the county will still have an actual and valuable property to show for its expenditures.

(e) Limiting the term of bonds so that the life of the bond will not exceed the life of the improvement.

### ARTICHOKES.

Any good potato land will grow artichokes and they are adapted to a great variety of soils. They may be fed to all kinds of stock on the farm, but their best use is found in providing food for swine as the swine to a considerable extent, at least, may be made to do the harvesting of the crop, says Prof. Thomas Shaw. Where the conditions are very intensive the tops are sometimes cut and used as fodder. In dry areas where fodders are not plentiful the tops may be well worth the labor involved in harvesting them, but where fodders are very plentiful the tops are but little used. The tubers are more watery than potatoes, but they are richer in protein. In feeding value they have been found fully equal to potatoes, viewed from the standpoint of practical results. Their ability to withstand frost adds much to their economic value. When left in the ground over winter they remain uninjured, even where the cold is quite intense and prolonged.

They are grown much after the fashion of potatoes. They may be planted in the autumn and also in the spring. Very large claims are sometimes made in regard to the yields, but usually 100 to 150 bushels are considered fair. They may be dug and kept in pits or cellars, and when thus kept they are not so easily injured by frost as many other plants are of the tuber or even of the field root order.

#### Feeding Value.

As part of a ration for dairy cows 15 to 20 pounds a day would be enough but are used only to a limited extent for that purpose. For young stock they are good.

For sheep both the roots and the tops of the plants may be used in providing food. Sheep soon come to be fond of both, but they will not consume the woody portions of the stalk. Both growing sheep and breeding flocks will be much benefited from supplementing the other dry food

fed with two or three pounds of artichokes per day. The cost of handling field roots as rutabagas and mangels, however, is so much less that where these can be grown they will to a great extent preclude the growing of artichokes as a food for sheep.

It is for swine artichokes have the greatest value, particularly for the growing stock. Should the plants give trouble by remaining in the ground and growing in the crops that follow it will be found that if they are allowed to make a considerable growth in the spring and they are then plowed under and a cultivated crop is grown on the same land, they will disappear.

### AGRICULTURAL USE OF LIME

The use of lime as a fertilizer dates from the inception of modern scientific farming. Agricultural chemists have shown that there are five or six different functions which lime may perform to benefit a soil, which may be summarized briefly as follows:

1. It is an essential element of plant food.
2. It aids in the conversion of decaying organic matter into humus.
3. It forms compounds with the humic acids which tend to prevent their being leached out of the soil and lost.
4. By producing proper sanitary conditions the growth of injurious bacteria is largely prevented, while the growth of nitrifying bacteria is encouraged. These nitrifying bacteria convert the nitrogen of the humus into such a form that it is available as a plant food.
5. Lime aids in the liberation of potash and phosphorus from inert compounds.
6. It tends to flocculate clay soils, rendering them granular and more porous.

Obviously, permanent results can not be expected unless care is taken to insure the presence of some organic fertilizer at all times. Lime used alone may be temporarily beneficial but will eventually be harmful; when used with cowpea vines it becomes more efficient for general purposes than almost any other fertilizer. Of course, lime is not beneficial to all crops to the same extent, and not all soils need lime. Thus, some of the common plants which are stated by the Department of Agriculture to be benefited by lime, are spinach, lettuce, beet, celery, onion, cucumber, cantaloupe, asparagus, peanut, rhubarb, pea, pumpkin, bean, tobacco, alfalfa, clover, barley, wheat, oats, timothy, gooseberry, current, orange, quince and cherry. Indian corn is only slightly benefited.

Plants which are said to be slightly injured by lime are cotton, tomato, cow-pea, concord grape, peach, apple, and pear, and those really injured are radish, flax, blackberry, black raspberry, and cranberry.

Whether a soil will respond to liming or not depends on the amount of available calcium oxide which it already contains. Probably the best indication of the need of lime is the failure to obtain a good crop of clover.

The question whether lime should be applied to the soil as quicklime, hydrated lime, air-slaked lime, or ground limestone is still the subject of a great deal of controversy. The advocates of ground limestone claim

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that the caustic properties of quick or hydrated lime will burn up and destroy the organic matter in the soil, whereas limestone can be applied in large quantities at long intervals and will therefore produce a more or less permanent fertility. The advocates of lime claim that one of the main functions which lime has to perform is the destruction of the organic matter and the liberation of the nitrogen in such a form that the plant can use it; that the frequent and judicious use of lime, together with some organic fertilizer, will bring immediate results. Of course the local conditions of each particular case must be considered before a final conclusion can be reached. Thus, it is rational to use quicklime on soils which are exceedingly rich in organic matter, such as peaty or swampy soils. Limestone is safer than quicklime when applied just before planting a crop which is little helped by liming, or when applied to a light sandy soil in hot dry weather.—(The Source, Manufacture, and Use of Lime, U. S. Geological Survey.)

### SILOS AFFORD PROFIT

#### Clover and Oats Crops to be Near Ripening Stage for Ensilage

Every man who has used a silo and used it so that he gets good ensilage out of it, is enthusiastic for that form of cow-feed. Every man using a silo should get good ensilage out of it. The Weyerhaeuser Lumber Co., justly claim that they would sell three times as many silos next year as they did last, were it not for the fact that too many of the new beginners with silos put the crop in while it is yet too green. They look at the rich, succulent crop, be it corn, clover, rye, oats or any of the mixtures, and it seems to them that it will make better feed if put in the silo at the time when the cattle would apparently like it the best in the green state. They do not seem to realize that it undergoes a change after being put in the silo.

Ensilage becomes ripe, as we say about cheese, after a ripening process. This process comes about from the transformation of sugar and the acids in the grass changing into lactic, acetic acids, alcohol, a small amount of yeast, and other bacteria forms. When it is put in too green, it breaks down into the forms of bacteria which are commonly known as decayed. It sours, becomes putrid and the smell annoys the whole neighborhood. So neighbor Jones says, "No, I am not ready to buy a silo yet. I'll wait and see how Smith comes out."

This is a mistake. Every farmer who hesitates about putting in a silo, who wants to progress in his dairy work and who wants to make every cow realize him from fifteen to thirty

dollars profit more than she has done, should investigate ensilage from those who know how to put it up and not from a novice. Surely he should not permit himself to be influenced by those who are enthusiastic over silage, but have not yet learned how to put it up. As W. V. S. Robb, of Kent, says, "I cannot understand how any man would question it." Mr. Robb makes a success of ensilage from his Weyerhaeuser Silo as he does of all his work.

Our farmers are learning, however, and now in almost every county of this state they may avail themselves of the advice of the County Agricultural agent and undoubtedly many of them who have not had satisfactory results will consult the agent before putting in their crop of 1915, indeed I believe it would be well for many of them to consult the agricultural agent as regards what is best for them to plant and to do it as early now as possible. In so far as successful results go, I only wish that all my friends in King, Pierce, Snohomish, Thurston, Lewis, Kitsap and Island Counties might be present at our Dairymen's Association to themselves tell of their varied experience. Many of them are making enough money out of the saving off the silo to more than pay for it the first year. Muttart Brothers of Auburn, are paying for their silo at the rate of \$17 per month, while they claim that the saving, together with increased produce is making them a net profit of twenty dollars per month over and above their last year's results. I have found none who are siloing corn who are getting improper results. With oats and vetch and the legumes the conditions are somewhat different and the farmers are inclined to silo these too green. Wherever they have permitted the oats to get nearly ripe, or clover to get well along, the ensilage come out in very fine condition and most palatable and healthful to the cows.

The profits from ensilage are varied, being variously estimated at from fifteen dollars per cow per year, to the last report we have from the Iowa Agricultural College, which reports that their findings are to the effect that a half dozen cows when fed on a green ration; while a similar bunch whose feed included a ration of ensilage, produced a profit of over fifty-six dollars per year.

The work goes on by leaps and bounds. I have the report of the Wisconsin State Board of Agriculture showing that there are now over 50,000 silos in that great dairy state. I venture that at no distant day, Washington will have 50,000 silos. There are five prospects for silos the coming year to one that was apparent a year ago.

ROBT. BURT,  
Seattle, Wash.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### DUTY OF WATER

There are two general ways of speaking of the duty of water, says E. B. House in Reclamation Record. One is to state the number of acres a second-foot of water will take care of, and the other is to speak of the num-

ber of acre-feet of water used per acre.

"We used to figure that land in a certain section needed 1 second-foot of water for every 40 acres, and in this case the duty of water was 40 acres per second-foot. Later we raised this duty to 60 acres per second-foot; then we made the duty

## BEST PEAS GROWN

KAUFMAN'S PROLIFIC, SHORT VINED, HAND PICKED BLUE BELL PEAS

\$240 PER ACRE. (Over 28 tons from 14 acres; was offered \$120 per ton) RECORD CROP OF PEAS!

Write for price list and circulars (used as supplementary reading in many High Schools).

W. H. KAUFMAN, Bellingham, Wash.,

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STANDARD  
CYPHERS INCUBATOR  
Fire Proofed-Insurable.

VETCH, TIMOTHY, RYE, ETC.  
OVER 99 PER CENT. PURE

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Don't forget we handle CONKEY POULTRY REMEDIES, Conkey's Lice Powder and all of their Stock Foods.

BARTLETT'S Calf Meal, the perfect milk substitute.

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LARGE PEAR CROPS—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

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80 acres per second-foot, and for a long time it was the custom to provide a second-foot of water for each 80-acre tract. Now we are figuring the duty of water to be 100 or 120 acres per second-foot.

"Can we do better than this? We certainly can, for in southern California, where water is scarce and valuable, they make a second-foot of water take care of 300 acres, and where sub-irrigation, by means of underground pipes is used, the duty in some cases has reached 1,000 acres per second-foot.

"This method, however, of figuring duty is not the best by any means, for it presupposes a continuous flow of 1 second-foot throughout the irrigating season. The farmer when he irrigates usually wants more than a second-foot head, and he uses it for a few days or weeks, and then uses no water at all for a period. Hence the second way of stating it, which is in acre-feet per acre, is usually the best way.

"A second-foot of water running for 24 hours delivers approximately 2 acre-feet. (To be exact it delivers 2 acre-feet in 24 hours, 12 minutes.) Let us say the irrigating period is 120 days, and 1 second-foot would deliver in that time approximately 240 acre-feet. If this were applied all at once to 100 acres, it would cover to a depth of 2.4 feet, and we would say that the duty of water in this case is 2.4 acre-feet per acre.

"The duty of water, then, in acre-feet per acre, is the number of acre-feet of water applied to each acre of land, during the entire season. It varies the country over from 1 acre-foot per acre to 10 or 12 acre-feet per acre.

### DRAINAGE

Speaking of draining irrigated lands, R. A. Hart, United States drainage engineer, says in the National Land and Irrigation Journal that a great deal more care and study are necessary to the design of drainage works in an arid than in a humid region, as there are far more opportunities to make errors. In the case of the latter it is practically impossible to locate a drain so that it will not do some good, and the problem is merely one of securing the highest efficiency. In the former case, however, it is not only quite possible, but is of frequent occurrence, that a carefully laid drain will prove absolutely ineffective, while a very slight change in location or depth will render it remarkably effective. The drainage of irrigated lands is a true science, involving a great deal of technic, and should not be undertaken without the advice of an expert and without careful attention to every detail of design and construction.

The fundamental purpose of draining irrigated lands is identical with that of draining humid lands; that is, the removal of surplus moisture from the soil spaces, throughout the root zone. The direct results sought after, however, are more complicated, and oftentimes entirely different, and as a rule there are vital differences in the modes of operation and the methods applied.

Drainage systems in the humid sections are designed with the view of removing a certain depth of water from a given area in a desired per-

iod of time, usually expressed in terms of fractions of an inch in 24 hours. This is done to provide a suitable escape for excess storm water, and the probable precipitation is, therefore, a factor of important consideration. Besides the removal of excess storm water in a short period, drains in humid sections are also employed for the drainage of permanent swamps, the removal of water due to overflow, and the expedition of the movement of spring water.

On the other hand, drainage systems in the arid sections are designed primarily to effect the removal of excess irrigation water from a certain tract, and to protect the tract from injury due to seepage from the irrigation of higher lands, and in a small way, to seepage from the irrigation canals. This calls for continuous action and drains, therefore, must be designed to take care of the maximum flow.

The drainage of permanent swamps, the expedition of the movement of spring water and the removal of storm water are also effected; but these are of less importance. Incidentally, the harmful alkali salts, that usually accompany seepage conditions, are removed and the level of the ground water is permanently controlled. These factors are of vast importance, fully as great as the removal of the original water.

The necessity of providing for the maximum discharge, the greater depth required, the higher cost of materials, and the difficulties encountered in construction on account of the nature of irrigated soil when waterlogged, make the unit cost of drain higher than that in humid sections. Conversely, drains in an irrigated soil are usually effective throughout greater areas, so that the actual cost of drainage is lower than in humid localities.

### CONCRETE FOR IRRIGATION

The lining of irrigation canals with concrete in order to prevent losses in the transmission of water is discussed at some length in a forthcoming bulletin of the United States Department of Agriculture (No. 126) entitled, "Concrete Lining as Applied to Irrigation Canals." The census of 1910 shows that there were more than 120,000 miles of unlined irrigation canals in the West. Forty per cent. of the water that passes through this, the author estimates, is lost, or, if allowance be made for that which is later recovered by low conduits the loss is still more than 25 per cent. So much of this loss could be obviated by the use of concrete that in many places the value of the water will more than offset the increased cost of construction.

### FINE GOAT RANCH

800 acres of good land. Over half of it can be plowed when cleared. Balance fine pasture. Watered by creeks and springs. Located on the Northern Pacific Railway between Portland and Tacoma. Price \$15 per acre. Good terms. The best proposition for a goat ranch in Western Washington, subsequently to become a dairy farm. This opportunity merits careful consideration by any prospective stock farmer.

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401 Equitable Building, Tacoma.

## Profit by the experience of others

It has been demonstrated time after time that no other material can take the place of burned clay Drain Tile. This material has been through the fire as part of the manufacturing process, and as a result, is not affected by bog and other destructive agencies.

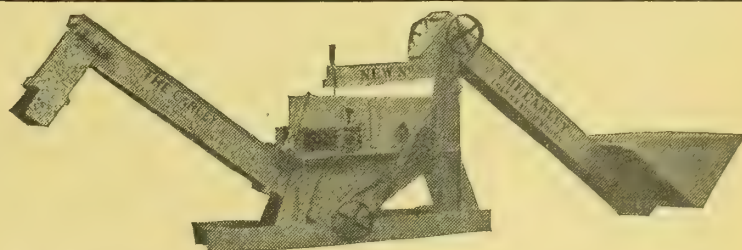
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|              | Weight per ft. | Per Thousand ft. |
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| 3-inch ..... | 5½ lbs.        | \$15.00          |
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Free on board cars, Seattle. Minimum carload, 30,000 lbs.

Ask us for pamphlet, "HINTS ON FARM DRAINAGE." It's free.

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SIZES  
THE LATEST AND BEST MILL ON  
THE MARKET TODAY

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Colfax, Wash.  
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**Pear, Cherry, Apple, Prune and Peach**  
Full Line Shade and Ornamental Stock

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

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Salesmen wanted.

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Prices on Request.

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Established at present location for 25 years. Nurserymen for four generations is the record.

**APPLE TREES**—All leading varieties 4 to 7 feet stocky trees: Yellow Transparent, Gravenstein, Wealthy, Wagener, King, Olympia, Baldwin, Winesap, Winter Banana, etc.

**PEAR TREES**—A fine stock of Bartlett, Anjou, Bosc, Angoulene, Comice and others; also Dwarfs.

**CHERRY TREES**—A choice lot of Lamberts, Montmorency and other kinds.

**PLUM AND PRUNE TREES**—Strong Italian, French, Sugar Bradshaw.

**SMALL FRUITS**—Gooseberry, Currants, Blackberry, Raspberry, Loganberry and other classes. Strong plants.

**ORNAMENTALS**—Roses affording satisfaction, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce and other coniferous, and small evergreens.

Write for prices and complete list and please mention this paper.

**JOHN A. STEWART & SON, Christopher, Wash.**



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FOWLER

### CHRISTMAS CAROL.

The earth has grown old with its burden of care,  
But at Christmas it always is young;

The heart of the Jewel burns lustrous and fair,

And its soul full of music bursts forth on the air,  
When the song of the angels is sung.

It is coming, Old Earth; it is coming tonight,

On the snow flakes which cover the sod

The feet of the Christ-child fall gentle and white,

And the voice of the Christ-child tells out with delight,  
That mankind are children of God.

On the sad and the lonely, the wretched and poor,

The voice of the Christ-child shall fall,

And to every blind wanderer open the door

Of hope that he dared not dream of before,

With a sunshine of welcome for all.

The feet of the humblest may walk in the field,

Where the feet of the holiest trod; This, then, is the marvel to mortals revealed

When the silvery trumpets of Christmas have pealed,

That mankind are the children of God. —Phillips Brooks.

### MODERN CHRISTMAS GIVING AND THE ETHICAL VALUE

From an interesting paper read before the Nesika Club and Chapter C. P. E. O., Tacoma, by one of its members.

"At Christmas play and make good cheer,  
For Christmas comes but once a year."

The intensity of modern life and the deepening of consciousness through intelligence breed sadness. We think too much and work too hard to have time for enjoyment, and if we suddenly discover that we have need of it, we take it in inordinate quantities, rather than in simple and natural ways; we go out and buy pleasure at so much an hour instead of somehow contriving to live a mirthful life.

Close observers of modern society, like Walter Besant, have discovered that a main lack in the lives of the poor is that of cheer, and he urges that philanthropic plans should embrace measures for daily brightening the lives of the people by some simple experience of a pleasurable sort. It would be a sombre fact if the number of those who live through a day without a laugh or even a smile could be ascertained,—a strange miscarriage of nature, since man is the only being who is capable of that action.

Christmas has rendered the world this good service that now for many centuries it has called men to sympathetic cheerfulness. It comes, indeed, but once a year, but for some days the cloud on the brow of hu-

manity lifts a little and the wail dies out of its voice. At times it has been too obstreperous in its mirth and called for puritanic check, but for the most part it has been true to its origin and stirred the human heart to sympathetic gladness and hope.

Spiritual values are lost sight of in the material setting forth of Christmas. The trouble with the modern Christmas lies in our lack of simplicity concerning it. Too many trees are cut down, too many and too expensive gifts are given. Reciprocity not free trade is the motto. Simplicity in giving and in having a good time is an art we have lost in making a business of Christmas,—so many presents to give—so many letters of thanks to write.

Love demands little else than the power to feel and requite love, or as Coleridge says, "The happiness of life is made up of many little fractions,—the little soon forgotten charities of a kiss, a smile, a kind look, a heart-felt compliment in the disguise of playful raillery and the countless other infinitesimals of pleasant thought and feeling."

First of all, the children must receive attention. Little ones' toys may be easily selected, but nice discriminating taste and much judgment are called for where the older children are the recipients of our favor. Let us become children again for this one time of the year,—who would ever lose the pleasure of belief in the Christ child who to little children makes known the coming of His kingdom by their faith in Santa Claus?

After the children come the friends whose loving courtesy we wish to acknowledge by some dainty attention. What shall I give my friend for whom my heart urges me to make some pleasing conception that shall express in part my tenderness and thought for her? Oftentimes the only means a woman has of expressing an inborn artistic tendency is by pen, brush or needle, and who shall say time thus spent is thrown away? With no large expenditure of time or money the woman who is skillful can fashion the daintiest conceits. Each gift, no matter how conventional, carries with it something of the givers' self, but that self needs to be renewed by gratitude, not for the measure of the gift but for the thought that prompted it. Man people find extreme difficulty in believing in the loneliness of others. The majority of us with our circle of friends and our business find every hour of the day bringing its own keen interest. Yet there are multitudes who feel almost intolerably lonely. Pride, shyness, unhappiness and a lack of a natural flow of interest in their life or temperament cause this real misery and while it may be hard to understand, this type of character, yet after the children and our friends, have we not time and strength for these lonely ones?

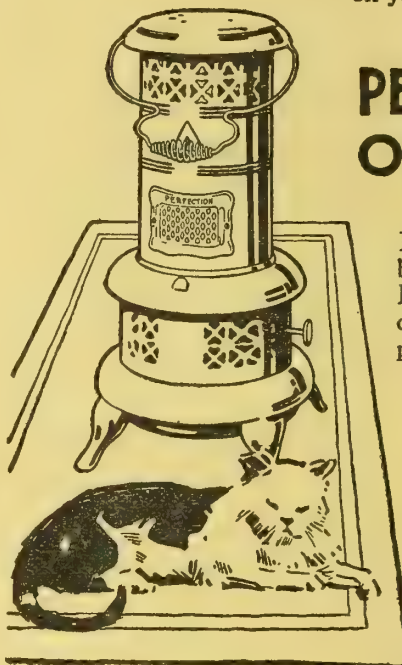
"Christmas is pre-eminently a festival of the family, and a cheerful and pleasant festival it is where one is privileged to get back to the old home and spend the day with the old folks, with the sisters and cousins and aunts and uncles! But how many among our acquaintances are

# Merry Xmas



Comfort for everybody—a gift that is useful from cellar to garret. Be sure and mark down on your Xmas list a

## PERFECTION OIL HEATER



Father uses it to warm the bathroom for shaving. Mother sews beside it. The children dress by it. A practical gift.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

Standard Oil Company  
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For Best Results  
Use Pearl Oil

Not merely  
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HEADQUARTERS  
FOR HOTEL AND  
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A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

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Oldest and Largest Mail Order House in the State.

## Sunshine Lamp 300 Candle Power FREE

To Try In Your Own Home  
Turns night into day. Gives better light than gas, electricity or 15 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.  
SUNSHINE SAFETY LAMP CO.  
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RED AND ALSIKE CLOVER SEED—  
Direct from the section where grown, at lowest price.  
Address Rhoten Farm, Salem, Oregon.

STRAWBERRY PLANTS — Clarke's  
Seedling at lowest wholesale price. State quantity wanted. W. LEHMAN, White Salmon, Wash.

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Native Shrubs, Plants and Flowers, collected from the forest.

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## PEONIES

The popular and satisfactory flowering plant for the Northwest.

Our experience in ornamentation of the home surroundings is your opportunity for suggestions, free of cost.

For complete information, send for a copy of our special peony catalog, free.

BEAVERTON NURSERY

Beaverton, Oregon.

H. E. Weed, Prop.

Please mention this paper



there who have no families; how many excellent old bachelors and lonely old ladies! We do not mean the poor—there are plenty of philanthropists to look after them,—but a man may be rich and yet if he have no place to eat but a hotel he is poorer at Christmas than an Irishman with six children and only money enough for one meal. He belongs to a class which may well be an object of your solicitude. Perhaps they could buy you out thrice over, but you have a home and they have not. Be good to them—ask the lonely man to dinner. It is not for the dinner's sake, but for the spirit in which you make them guests at your house, and these lonely people will bless you."

Finally: To each of you is extended the Christmas wish:

"May all the paths you ever tread  
Be like the holly green,  
And lighted up with friendly smiles  
Like holly's burnished sheen.  
May all the thoughts you ever have  
Be like the mistletoe bedecked with  
pearls,  
And all your deeds  
Pure as the Christmas snow;  
Yule logs of love burn in your heart,  
With rosy warmth and cheer,  
And care—well may she come at most  
Like Christmas,—once a year."  
Mrs. B. M. S.

#### THE FARM KITCHEN

Improvement in the arrangement of the farm kitchen will result in saving the energies of some 8,000,000 people and make their work less heavy and more enjoyable, according to Farmers' Bulletin No. 607, issued by the U. S. Department of Agriculture, Washington, D. C.

This bulletin, entitled "The Farm Kitchen as a Workshop," discusses not merely the proper location of the kitchen with reference to other parts of the house, but gives details as to the best methods of treating floors and walls, and gives well tested floor plans for the step-saving arrangement of the sink, stove, table, and other kitchen utilities.

The author of the bulletin, in her introduction, states that a small, compact kitchen saves many steps and much useless labor in the preparation

We can supply you with GLOVES for Christmas presents.



Sent prepaid to any address. Send for price list.

K. PETERSON,  
K Street Tacoma, Wash.

of food. This, however, is in homes where the kitchen is merely a workshop, and not used also as a general purpose room where meals are served and where the family gathers to enjoy the warmth of the stove. Even where a large kitchen is needed for such purposes, however, a logical arrangement of its various features with relation to each other will enable the housewife to do her work much more efficiently.

#### THE CHRISTMAS HOLLY.

The holly! the holly! oh, twine it with lay—

Come give the holly a song;  
For it helps to drive stern winter away,  
With his garment so sombre and long.

It peeps through the trees with its berries of red

And its leaves of burnished green,  
When the flowers and fruits have long been dead,  
And not even a daisy is seen.

Then sing to the nolly, the Christmas holly,

That hangs over peasant and king.  
—Eliza Cook.

#### THE PRIVILEGED GIFT

He who gives a child a home  
Builds palaces in Kingdom come,  
And she who gives a baby birth  
Brings Saviour Christ again to Earth.

Lord, give to men who are old and rougher

The things that little children suffer,  
And let keep bright and undefiled  
The young years of the little child.  
John Masefield in "The Everlasting Mercy."

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

#### A REGISTERED SIRE THAT PAYS

In giving his experience with registered cattle, particularly showing how it pays to have a sire backed with high producing records at the head of a registered herd, Wm. Todd, the senior member of the Cascade Farm, North Yakima, shows how well it has paid them to work on a proper foundation in a practical way, through a number of years. Mr. Todd has been engaged in dairying all his life, for years in the southwest of Scotland with Ayrshires, very suitable for that country. The produce there was mostly made into Cheddar cheese.

Since locating in the Yakima valley

they began with a small herd of registered Holsteins and were fortunate enough to secure, some years ago, the sire Johanna Colantha Champion, which has paid them extremely well.

His two-year-olds with first calf have records of 17½ lbs. to 21½ lbs. butter in 7 days. At the time of the State Fair last fall one of his daughters, Cascade Marie, was sold to Wm. Bishop for \$1500. She was the Grand Champion young cow at Spokane, North Yakima, and Salem.

At the Yakima Valley Breeder's 2nd annual sale, held last month, three of his daughters, consigned by Wm. Todd and Son, were sold, one for \$575, another for \$530 and the



## ELECTRIC LIGHTING

Nothing complicated. Simple in operation. Low cost of maintenance. There are many reasons why you should have electric lighting conveniences on your farm which are best explained in our pamphlets sent free of cost on application. Will be glad to have you give us information about the size of your buildings, distance apart and your facilities, if any, for generating power. Don't hesitate to ask questions.

WRITE FOR ILLUSTRATED CATALOGUE AND PRICES.

CHANDLER-DUNLAP CO.

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For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

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## Shrubs - Plants - Vines - Trees

Having taken over the entire stock of the Richland Nursery, we are prepared to fill orders for all kinds of Flowering Shrubs, Vines, Clarke's Seedling Strawberry Plants, European Grape Vines and Shade Trees in choice grades. Please let us know your needs early and get a copy of our catalog and prices.

BREITHAUP T NURSERY CO.

C. F. Breithaupt, Prop.

Kennewick, Wash.



## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

Please mention this paper

## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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## MILLER BROS. COMPANY

## CASH for CREAM

We are always in the market for cream. You will like our method of doing business. Give us a trial.

We cheerfully reply to inquiries concerning grade and quality to best serve our mutual interests.

Yours for a Happy and Prosperous New Year.

MILLER BROS. COMPANY

1532 Commerce St., Tacoma, Wash.



third for \$400. Here is a record of \$3005, for four young cows from this sire, besides other sales and many more calves of last year and this years production of both sexes. Does this answer the question whether or not it pays to have a registered sire with satisfactory authenticated records?

Mr. Todd has settled the question for himself and for many others, beyond the shadow of a doubt. Persistent care and painstaking methods necessarily have been bestowed and for many valuable hints serving for the highest measure of success in the daily routine, Mr. Todd is always ready to impart from his experience in a pleasant and unselfish manner.

### REGISTERED OR SCRUB SIRE

#### Business Methods in Dairying

In nearly every farm community there are striking contrasts. We find certain dairymen whose cows are paying out in a good margin of profit. A short distance from there the farmer says he "can't make it pay to keep cows." Of course he can't. No one else can. The only correct way is to have the cows keep their owners or to separate from cattle entirely.

The difference of opinion is usually caused by the difference in the foundation, both as to kind of stock and the manner of operating. Very great strides have been made by the dairymen in the Pacific Northwest during the past five years. Before then there was much indifference about the necessity of securing pure bred sires. At the present time a large proportion of farmers have been convinced that money spent for a sire whose family records indicate a high measure of production is a most excellent investment.

The plans to lower cost of production in every way is being very carefully mapped out by our dairy farmers.

There are many of our readers however who do not yet realize the importance and value of the registered sire of proven worth.

Experienced dairymen will agree with E. B. McFarland of the Staebrae Farm, who repeats the statement by W. M. Carruthers in "Orchard and Farm" that the scrub bull is the most expensive and extravagant piece of cattle flesh on the farm. He does not stop at being merely worthless, but will lose the farmer the price of two or three good bulls every year he is kept. The dairyman cannot afford to keep a scrub bull if the animal is given to him, if he is paid for boarding the beast and given a premium of \$100 per year for using him. The presence of the scrub in so many herds—many times without a single qualification except that he is a male—is an offense and disgrace to the dairy business and a plain advertisement of the dairyman's bid for failure. The only thing on earth the scrub sire is good for is sausage, and it is high time that this plain and simple truth were given practical acceptance on every dairy farm.

"By all means get a good dairy sire if you have to sell two or three cows to do it. The improved sire is, without question, the most economical investment in any dairy herd."

#### Cutting Out Poor Cows.

There is another matter that is de-

serving of equal attention, says Mr. McFarland, and that is the improvement of the dam, or what I call "Business Methods on the Dairy Farm."

"Old time methods must be discarded. The increased value of land and cattle, the cost of improved buildings and equipment needed to produce the best results, have made this necessary. A dairyman, to be successful, must combine business principles with his knowledge of breeding and farming.

The most important is the weeding out of the non-producing, non-paying animals. Persistency and quantity of the milk flow are two prime factors in the selection of a dairy cow. The Department of Agriculture and every periodical devoted to dairying, has repeatedly stated that "The profits yielded by a good cow often go to offset the losses caused by poor cows in the same stable." Experimental tests have been going on for some years, with the same result, the good cows are carrying the loss occasioned by the poor ones. But how can the poor ones be eliminated? That is easy of solution. Make a record; weigh the milk. A scale, which is made for the purpose, should hang in every barn, the milk should be weighed (separately from each cow) night and morning and the result entered on a sheet called a "milk record."

"A cow that does not give 4,000 pounds of milk a year would better be sold to the butcher, as 7,000-pound cows are easy to get and the expense is very little more than to keep the 4,000-pound cow. Dairymen are finding it to their advantage to raise their heifer calves. A milk record would show what calves to raise. The best only should be kept. If this is done the record would show, in a few generations, an increase to 9,000 pounds and even more per cow per annum.

"In a recent demonstration in Indiana two cows were shown, one that gave 17,000 pounds of milk per annum and the other 2,672 pounds. The first cow showed a profit of \$210.80 and the latter a profit of \$13.31 over the cost of the feed. When we consider the cost of care, the latter cow was kept at a loss.

"Experiments are being made for the farmer's benefit every day; experiments in feeding, care of animals and other subjects too numerous to mention. The results appear only in the farm journals. A few dollars put into subscribing for some of these periodicals would possibly save hundreds. Better farming, better buildings, better care, better livestock, better business methods, etc., are what make us really appreciate our farms. We come to a realization of the fact that life on the farm is the most independent, the healthiest, the most important and self-satisfying of any other on this green earth."

### GUERNSEY CHARACTERISTICS

Adaptability to Western Washington Conditions.

By S. M. Shipley, Seattle, Wash.

The Guernsey breed is well suited to the requirements both of the small rancher and the dairyman, who, in a larger way, is vitally concerned in



## Holsteins Fresh Cows and Registered Bulls

A large practical milking herd from which to select.

During the past couple of months some of our 2-year-olds have come fresh with a record of 17 to 20 lbs. fat in 7 days. They are excellent prospects for the 25 to 30-lb. record when fully mature. Quite a number of the youngsters of our high grades are making an equally good showing. We are in position to make up complete herds or to supply those who want one animal or several.

We also have some fine two-year-old, pure-bred bulls with high records back on both sides to offer at reasonable prices. Having a large herd of practical dairy cattle on hand we can supply almost any want in the dairy cattle line, as corroborated by our many satisfied patrons.

Write or make appointment for further particulars.

### VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

### HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. W. Hollinshead, LADNERS, B. C.

### Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

### Electric Light Farm

### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease Ellensburg, Wash.

Please mention this paper

### Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

LINBARGER, RALPH & GUE

AUCTIONEERS

Years of experience, thoroughly posted.

Geo. A. Gue, Ridgefield, Wash.

L. H. Linbarger, North Yakima, Wash.

W. H. Ralph, Nez Perce, Idaho.

Write for dates.

## Registered and High Grade HOLSTEIN CATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

### H. S. ROYCE

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper



the question of "the most profitable dairy cow."

By nature and development the Guernsey breed possesses characteristics which farmer and dairyman alike demand from dairy animals in order that they may produce dairy products, most efficiently and economically. These characteristics are ruggedness and constitutional vigor, with size sufficient for great capacity to consume and transmute food into dairy products, quietness of disposition with sufficiency of nervous energy to make dairy temperament of a high order, an abundance of yellow pigment with ability to produce milk and butter of high color and quality, without the aid of the drug shop, the power of converting food into dairy products, not only economically but at great profit.

While the foregoing constitute the chief characteristics of the pure bred Guernsey, there are minor talking points in her favor of scarcely less importance, namely: after separation of butter fat, the milk remaining both in quantity and quality, possesses superior advantages as food for pigs, calves and poultry, and secondly, the male calves from grade cows are next to the Shorthorn for veal, both on account of size and quality. The Guernsey male calves are much sought after for veal in Europe where they are shipped from Guernsey Island to the best markets in England and France, thirdly, by reason of their quietness of disposition and great domesticity, they are easily handled and readily conform to the requirements of any environment in which they may be placed. The prepotency of the Guernsey to transmit its breed characteristics to a remarkable degree, places the Guernsey in the first rank for use in grading up a common herd.

While speaking of the merits of this breed the writer is not to be understood as in any wise reflecting upon, or detracting from the admittedly strong merits of the other recognized dairy breeds. However, there are certain breed characteristics which though not peculiar to any one breed, are nevertheless more strikingly possessed by one breed than by others.

#### Cost of Producing, Color, Quality.

In all great national and state contests between the dairy breeds during the past few years, the Guernsey has been awarded first honor in the production of dairy products, at the greatest profit for each dollar's worth of food consumed, and also first honors in the production of dairy products of best natural color and quality. The official records of the Pan American Dairy Breed Test, the Columbian Exposition, the Chicago World's Fair, the Iowa and Wisconsin and other State dairy contests, places the Guernsey in the fore front as the most economical producer of butter fat as well as of milk and butter fat of best color and quality.

While the fact that a Guernsey cow at the present time holds the honor of possessing the greatest record for butter fat of all dairy breeds, does not in itself justify any claim of breed superiority for the Guernsey dairy cows as a class, owing to the fact that the leaders of all the distinctly dairy breeds are grouped so closely together as to their capability of production, nevertheless, such fact, together with the additional fact that

another Guernsey cow now on official test bids fair to exceed the present remarkable record of the world's champion May Rilma, is a significant indication of breed characteristics and superiority when we also observe the high average of the Guernsey class leaders in the seven advance register classes as compared with the class of the other breeds in the production of butter fat.

The thirty-five leading individual records shown by the advance register tests of the respective dairy breeds, afford a wider scope for comparison than do the records of the single individual leaders. These classes are divided according to age two to five years and upwards, seven classes being recognized in each breed, and each class composed of five individual cows.

Comparison of these 35 leading records compiled for each breed official report, shows the Guernsey's leading Holsteins in four to three of the classes and leading the Jerseys five to two in production of butter fat.

#### Grading up Common Cattle.

It is not the Guernsey pure bred alone that has won distinction for the breed, for equally high honors have been attained by the Guernsey grade. In the Wisconsin butter test 1000 cows competing, the Guernsey grade ranked first over all breeds in production of butter fat. The Guernsey sire today is recognized by practical dairymen as king "in the battle with the scrub."

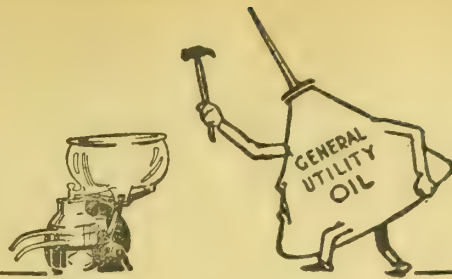
The Guernsey originated and has been developed to present form and dairy type under conditions and with natural surroundings both as to climate and soil conditions, which makes this breed particularly fitted to, answer the requirements of the Western Washington dairymen and rancher, for her environment here is quite similar to that under which the breed has been brought to its greatest perfection.

Whether it be for use in an area of logged off land, or in the improved valley farm or less highly cultivated upland, the Guernsey will be found at home ever responding economically and with the greatest possible efficiency to the care and expenditure in labor and feed that is made upon her. The Western Washington farmer when he comes to know the natural characteristics of this breed will never have occasion to say that the Guernsey cow is not adapted to the natural conditions here prevailing.

Under conditions in which high priced concentrate and limited pasturage prevail the Guernsey is superior because of her ability to produce a high quality product at least cost.

She is supreme when the progressive dairyman desires to market the highest quality dairy products, that will appeal to and hold the best and most critical city trade. Withal she produces a goodly number of quarts and is noted as a most persistent milker, as well as a reliable breeder.

In short, the Guernsey cow just fits in this section for here she finds conditions best suited to her natural requirements. A fair trial will demonstrate here as it has in Wisconsin that the Guernsey either as a pure bred or as a grade stands second to none.



## The Wrong Oil Ruins Your Separator

To lubricate your separator with ordinary or general utility oil is one of the quickest ways of sending it to the junk pile. You need a special oil for the finely adjusted mechanism of this delicate farm machine.

# Standard Hand Separator Oil

is made especially for cream separators—and for that reason it will most satisfactorily lubricate your separator. It keeps the bowl spinning smoothly and enables you to get *all* the cream. It doesn't "gum." Saves repair expense. Lengthens the life of your separator. Ask your dealer for Standard Hand Separator Oil.

**Standard Oil Company**  
(California)

## A. J. C. C. JERSEYS

### Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**

Grandview, Wash. (Yakima County)

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DURHAM JERSEY SWINE  
SHROPSHIRE SHEEP

**IRA P. WHITNEY, Supt.**

Route 7, Spokane, Wash.

## AYRSHIRES

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

**WILLOWMOOR FARMS,**  
Redmond, Washington

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.

## Windcrest Jersey Farm

Some choice young registered Jerseys for sale, both sexes. Large producers of milk. Test 5.5 to 6.5%. Herd headed by Eminent. Write for prices.

**O. F. LEWIS**  
R. F. D. 1 Blaine, Wash.

## YOUNG HOLSTEIN CATTLE FOR SALE

Desiring to confine my dairying to one breed of dairy cattle instead of two, have decided to sell 10 Holstein cows under six years, all coming fresh before January; also 5 coming-two-year heifers to freshen during the winter, and 5 choice calves. The cows are all good producers and all the stock is in excellent condition, high grade and has given satisfaction in my herd. I am offering the lot, or as individuals, at reasonable prices, all guaranteed as represented. For further particulars, description and prices, write or call

**F. I. MEAD**

California Bldg.

Prop. Mountain View Farm.

Tacoma, Wash.

Please mention this paper.



## HOLSTEIN SALE AT NORTH YAKIMA

The entire lot of Holsteins offered at the Yakima Valley Breeders' 2nd annual consignment sale, 84 head, including calves only a few days old, were sold at an average price of \$277.40 each. Considering that business generally is a little quiet, it was a very good sale, fair alike to both seller and buyer, but no one who bought will fail to make good money providing ordinary care is observed and barring any accidents, for the cattle have the quality and are all well acclimated. Messrs. H. C. Davis, Granger; E. B. Barks and Wm. Todd, North Yakima, were the principal consignors, and it is their intention to make the sale an annual event. Dairymen are thus afforded an opportunity to buy at prices based on their own good judgment. It is the ambition of the consignors to give satisfaction, to create a permanent business and thus assume a leading part of the work of building the dairy industry in this state.

H. S. Royne, of Tacoma, Wash., was the heaviest buyer, taking eight animals for a total of \$2805—an average of \$350 each.

The Munroe Company, of Spokane, was the next heaviest buyer, paying \$2620 for seven, an average of \$374 each; but the highest average was reached when the Greenbank Farm, Guy Richards, manager, paid an average of \$383 for five choice heifers.

Dr. Elmer E. Heg & Sons, Inc., of Seattle, topped the sale when they paid \$575 for Cascade Gretchen, consigned by Todd & Sons.

Wm. Todd & Sons consigned three bulls that sold for \$620, an average of \$206, and four females for \$1860, an average of \$465.

E. B. Marks sold four bulls for \$420, an average of \$140, and 26 females for \$8215, average \$316.

H. C. Davis sold eight bulls for \$1055, an average of \$131, and 33 females for \$8855, an average of \$268.

Among other buyers were J. C. Burnam, Snohomish; J. R. Hobson, Outlook; A. P. Peterson, Granger; Chas. Cotton, Twisp; R. N. West, North Yakima; J. H. Robbins, Ellensburg; C. G. Van Belle, Sunnyside; J. L. Smith, Spokane; Jno. Heffron, Sunnyside; Aug. Hess, Finley; L. D. Allen, Granger; G. H. Harris, North Yakima; C. S. Mead, North Yakima; S. W. C. Hand, Natches; W. M. Nelson, North Yakima; J. D. Laughlin, Zillah; M. Moller, North Yakima; F. L. Turner, Thorp; H. Eno, North Yakima; S. V. Tanning, White Bluff; P. Huxtable, Tieton; W. L. Palmer, Tigard, Ore.; H. D. Parks, Grandview; R. C. Garrett, Winthrop; W. Mieras, North Yakima; Chas. Cotton and Jno. Alexander, Sunnyside, and Andrew Savin, North Yakima.

## COW TESTING WAS PROFITABLE

Quite a number of dairymen in the State of Washington have profited by cow testing work. To weed out unprofitable grade cows there seems to be no better way. Keep the best producers and get good sires and the question of obtaining good dairy herds is solved.

Progressive dairymen agree with Hoards Dairyman that cow testing associations not only set a person to thinking, observing and minding the dairy herd better, but show condi-

tions which cannot help but lead a man to action. It was found by one of the members of a Wisconsin Cow Testing Association that six cows in his herd were so good he could not afford to sell them at any price, and that four cows were so poor he could not afford to keep them. Not until this man tested his herd to determine the amount of fat produced did he know how valuable the six cows were and how poor the four cows were. If he is wise he will sell the four cows and hold on to the progeny of the six, and use a pure-bred bull which ought to bring him still better cows.

Another member of this cow testing association nearly doubled the profits of his cows by knowing what they were doing. He received \$401 more from the creamery for fifteen cows in one year than from the same cows the previous year. He spent about \$20 and a little time, and for this return he received \$401. The investment paid.

## DAIRY STOCK DEHORNED

Except in the case of cattle that are to be used for exhibition purposes all dairy animals should be dehorned. In the wild state cattle needed horns for protection, but in the present state of domestication horns serve no useful purpose and are a source of considerable annoyance.

On the adult animal the horns may be removed by the use of the saw or clipper. In either case the cut should be close enough to the head to leave a ring of hair on the part that is removed, otherwise there is likely to be a stubby growth of horn appear in the course of a year or two.

The best and least cruel method of removing horns is by means of an application of caustic potash to the horn buttons while the calf is from one to four days old. The hair is carefully clipped from the buttons and the moistened end of a stick of caustic potash is then rubbed on the spot until the skin bleeds slightly. Care should be taken to prevent the liquid caustic from running off the button, but if only a small amount is rubbed on there will be no danger from this source. If the caustic has been properly applied there will be a dent in the skull where the button appeared and no horns will develop.

A. B. NYSTROM,  
Dairy Husbandman.

## WASHINGTON BUTTER MAKERS CONTEST

The annual scoring contest of Washington creamery operators and butter makers takes place at Commercial Club rooms, Central Bldg., Seattle, December 14 and 15 as we go to press. One object is to learn the defects in samples which fall below a high score and from the knowledge gained be able to improve the future out-put.

The prizes offered are:

1st—Silver Cup, given by DeLaval Dairy Supply Company.

2nd—Gold Watch, given by the Worchester Salt Company.

3rd—To have a cash value of fifteen dollars.

These prizes are to become the property of the winners of the three highest number of points in the contest of three successive years, three

## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

## Meadow Brook Farm

### Breeders of Pure Bred Ayrshire Cattle

We have for sale some very choice pure bred bulls, ranging in age from three months to three years old, from the choicest strain of Ayrshire Cattle. We have the only herd in the State of Washington that is tested under supervision of the U. S. Government. With every animal we furnish a certificate from the government that he is free from tuberculosis or any other infectious disease. Address all correspondence to

A. P. Stockwell, Aberdeen, Wash.

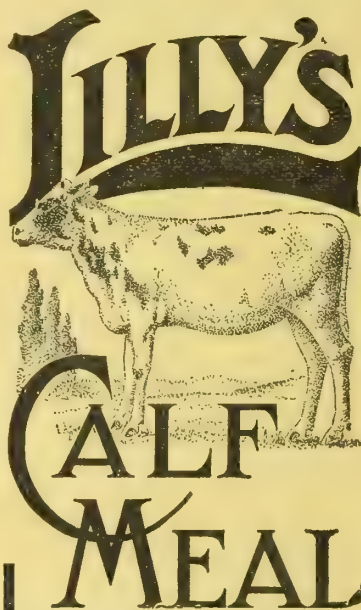
## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

J. D. ROSS & SON

Kent, Wash.



## Contented Calves

### We Offer Better Meal at a Lower Price

To make such a statement without proof would not be good business, yet we make the statement unreservedly because we do offer you exactly what we claim. To lay the foundation we installed at great expense, the best cooking apparatus for economical production. We then experimented until we made a perfect food for calves, scientifically correct. We believe that Lilly's Calf Meal is destined to become as famous as Lilly's poultry foods.

Sold by dealers or can be shipped by parcel post—25 lbs. \$1.00, 50 lbs. \$1.85, 100 lbs. \$3.50, f. o. b. Seattle and Portland.

The Chas. H. Lilly Co.

Seattle, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg. Seattle

### REGISTERED JERSEYS

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. TAYLOR  
Montesano, Wash.



contests to be held each year, this being the last for this year.

Much valuable educational work has been accomplished since the organization was started.

N. P. Sorensen, R. D. 2, Bellingham, is the secretary.

## WASHINGTON FOR RECORD HOLSTEINS

World's 4th Place Cow at Hollywood Farm Bought from B. S. Fryar, Who Makes Further Selections of Same Class.

The following letter is evidence of good judgment in selection, correct method of handling and feeding and a high tribute to the coast section of Washington as a dairy section.

Hollywood, Wash., Nov. 23, 1914.  
B. S. Fryar, Sumner, Wash.:

Dear Sir:

I am now more than ever thankful for having met you, as another record from a cow bought of you has turned out great. This cow is Pietertje Floa Artis, No. 114334, which finished her best seven days with 38.141 lbs. butter to her credit. As she is only six years old, I think she has a swell chance to do a lot better than this, as this cow has a lot of this kind of work in her system. I have terested her three times now and she has never failed to beat her last record by a wide margin. I hope to get her into third place.

Lilith Queen Pauline, No. 110568, that I bought of you at the same time has a record now of 32.467 lbs. in 7 days, and the last time she was fresh she would have beaten this but for a touch of milk fever that only lasted a very short time but enough to knock her out of that, but at that she made 30 lbs. in 7 days. She is now on yearly test, and will finish in January with over 26,000 lbs. milk and over 1,100 lbs. butter. She is a wonder.

Rocelia Dale Hengerveld 2d, No. 125,330, another one I bought of you, has done remarkably well, as she has as a four year old, made a 7-day record of 25 lbs. and is now due for a better one.

Lorinda DeKol, No. 145,051, has a record of 28 lbs. in 7 days, and that is very good, considering that she has had a calf as soon as possible after the last one, never having a chance to rest up after.

I have had two other cows of your bringing to this country, that have done very well for me, although they had nothing when I got them. One was Phoebe Veeman Pauline Beryl, No. 110074, who made a 32 lb. record for me that was very close to 33 lbs. in 7 days. I had the misfortune to lose her the last time she calved or I am sure that she would have done a whole lot better. Another one is TeTonke Beauty, No. 102899, that has a record of 22 lbs. in 7 days. She is a small cow, but she has the staying qualities that make her a good one at the pail. There is another thing that is good about these cows, and that is that they are good consistent milkers. They not only make good record but hold up well in their milk. This for Washington for a place to develop great dairy cows. New York must look out or we will beat them out.

With these things to your credit, I consider that your judgment is excellent in picking out good ones.

With very best wishes, I remain,

Yours very truly,

F. S. STIMSON.

Pietertje Floa Artis is now in 4th place of World's record butter fat for 7 days, over all breeds. The 15 head bought by Mr. Stimson of Mr. Fryar during the past four years have all qualified for A. R. O. records.

Mr. Fryar bought one full sister and three nearly full sisters, with Pontiac breeding on the sires side, in New York during the early part of December, at a long price, but he wanted to maintain a reputation for bringing to Washington some of the World's highest producers in cows. He has two herd sires, one Sir Rag-

apple Soldine out of S. R. A. Korn-dyke and a splendid show bull of Pontiac breeding. Among the Guernsey sales last month were to W. H. Cline, Orcas, 3 purebred Guernsey heifers, to C. E. Linder, Redmond, Wash., and to L. Barnes, Ravensdale, Wash., each 2 Guernsey heifers.

Purebred foundation stock, with good registered herd sires is again demonstrated to have paid the owners well.

## BOVINE HEALTH AND PURE MILK.

Is the Tuberculin Test Unreliable?  
Editor Northwest Horticulturist and Dairyman:

The application of the tuberculin test to the herds of dairymen and stock-breeders is ruinous to the industry. It provides a source of profitable employment to a large number of veterinarians, who have for many years advised the general public against the use of milk other than that from cows subjected to the tuberculin test. The stock and dairymen, accepting their advices, have given these tests a fair trial, and from their experience, we must draw our conclusions. They are now condemning its use, and unanimously, I may say, where the tests have been in use for any length of time.

There is a division of opinion between the veterinarian fraternity, many of the most able and experienced veterinarians have always discountenanced its use on the grounds that it could not be transmitted from a bovine to a person, and further, of which positive proof has been accumulated, that tuberculin is absolutely unreliable, and in its application furnished but very little, if any, relief to the public.

An extract from a letter by George E. Stevenson of Pennsylvania, in Hoard's Dairyman of April 3, 1914, is as follows:

"The Milk News" of October, 1913, contains an article headed, "Is the Bureau of Animal Industry of the Department of Agriculture on the square?" Are some of its head officials safe guardians of the animal industry of the nation? Are they simply blind partisans to a theory which evidence cannot remove, or something worse?"

"The bureau of animal industry made a tuberculin examination for scientific purposes at the Union Stock Yards at Chicago, Illinois, on 500 head of dairy cows, selected from packers' droves for killing, the results of which were not made the subject of a bulletin, or given to the public under sensational headlines by the daily press. Results of the test were that 402 out of 500 got a clean bill of health by the tuberculin; 76 reacted or were declared diseased, and 22 were called suspicious. That is, the tuberculin did not tell the veterinarians whether they were or were not diseased. The post-mortem examination of the 402 healthy animals revealed 375 healthy animals and 26 diseased, 8 of which were sufficiently bad to be condemned as unfit for food. Of the 76 reactors, the post-mortem revealed 9 healthy cattle, 67 diseased, 34 of which were condemned; and of the 22 suspicious cattle, 7 were found sound and 15 diseased, 4 of which were condemned as being unfit for food.

The demonstration proves beyond question that the action of tuberculin is so unreliable as to be a farce in its general application, as this shows that were it a herd of milk cows, that they would still retain in the herd 12 cows that were so badly affected that a tuberculin test would not react, which is the case with all cows that are beyond a certain stage of the disease, and at the same time, would have destroyed 16 sound and healthy animals, and were this a herd of dairy cattle, there would remain in the herd the diseased animals, and the public would have been deluded into believing that they were getting milk from healthy cows.

The effect of the drastic law requiring the tuberculin test for interstate shipment, and the uncertainty and unreliability of the test have led to severe criticism of many prominent



We Extend To You All Good Wishes For

A Merry Christmas and

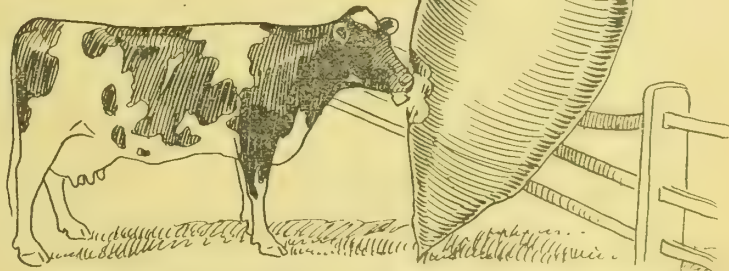
A Prosperous New Year

De Laval Dairy Supply Co.



## SLUDSTRUP

MANGEL WURZEL, BEET which was the means of making Danish Butter famous. Won highest prize by the Agricultural Society in that country.



WINS HIGHEST PRIZE IN YOUTHS' CONTEST, WASHINGTON.

Out of the Sludstrup beet seed I purchased from you last spring, my fourteen-year-old daughter planted some to make a showing at the Children's Industrial Fair, which was held in Tacoma, and she was very proud of the fact that she got the first prize for the best ten beets grown in the State. I consider the Sludstrup beet the best one to grow in this section for feeding to dairy cows. Yours truly,

FRED NELSON.

We introduced the seed into this country about two years ago and wherever tried out it has given flattering results, is a great cropper with 24 to 28 per cent. more dry matter than Golden Tankard or Long Red.

In order to distribute this seed more widely among dairymen of the Pacific Northwest we are offering to give one pound of Sludstrup seed, absolutely FREE with each order for \$1 worth of our TESTED GARDEN and FLOWER SEED. Can you ask more when we take all precautions to have seed in all classes of

HIGHEST GERMINATING TEST AND BEST QUALITY.

Here is further proof: Aabling & Ebright Seed Co., Seattle. We tested garden seeds from 42 seed houses this past season and of all these yours came out No. 1 with an average test of 90.4 per cent.

FRANK B. BICKNELL,

Student in Charge, Winlock, Wash.

Our new catalog is ready for mailing January 1, 1915. In order to avail of this offer be sure to send your name at once to get on our mailing list. Orders will be filled in rotation as received.

AABLING & EBRIGHT SEED CO.

89 Pike Street

Seattle, Wash.

FRESIAN-HOLSTEIN CATTLE—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. N. P. SOR-ENSON, Bellingham, Wash., R. F. D. 2.

FOR SALE — Jersey bull calf, grandson of Noble of Oakland which has many tested daughters, and sold for \$15,000. Dam Allie Reeves, out of Register of Merit breeding. Write for price and further particulars. JOHN H. CHAPMAN, Tacoma, Wash., R. F. D. No. 2, Box 69.



and honest breeders, when careful investigation will show that the unreliability of the tuberculin test is alone responsible.

Every honest breeder who expects to profit by breeding and the sale of dairy cattle, values his reputation for honesty above all assets, and a tuberculin test has done more to ruin the reputation of many breeders than any other cause.

A further demonstration of the unreliability of the tuberculin test: A dealer in dairy stock shipped from an Eastern state a car of milk cows to western Washington. A part of the shipment was sold to a farmer, in Oregon. The tuberculin test was applied at the point of shipping, and also in this state, under state requirements, with a clean bill, and within 60 days from the date of the last tuberculin test, two of these cows died from tuberculosis. No doubt the owner of the cows was selling his milk as the milk from tuberculin-tested cows. It is a well known and established fact that an animal in the last stages of tuberculosis will not react under the tuberculin test, and that there is no assurance that any herd so tested in the State of Washington will afford the public milk free from the dread bacillus.

Dr. E. R. Baldwin of Saranac, Wisconsin, a recognized authority on tuberculosis, says in part: "It is time for a reaction against the extreme ideas of infection now prevailing. There has been too much popular literature by health boards and lecturers that has no sound basis of fact and needs to be dropped out or revised."

These statements represent not one man's views, but what seems to be the growing convictions of the students of tuberculosis at the present time. There is no evidence that would be competent in a court of justice in establishing the claims of the advocates of the tuberculin test, that tuberculosis can be transmitted from a bovine to a human being. When we scan the scientific field in search of evidence, we find the real scientists are not in accord with a certain class of our veterinarians. The sole evidence on which these advocates of the tuberculin test rely, is, they find in the diseased human body bacillus alike in form to those of the bovine, hence the conclusion is that bovine bacillus may have been transmitted from the bovine through the blood to the milk, to the human system.

And until scientists are able to trace to a certainty the bacillus from the bovine, it will remain a theory or conclusion unsupported by evidence or history. These eminent veterinarians have never traced the bacillus from the bovine to their source or original creation, which should be done in order to protect the lives of the cows, nor do they assume that these bacilli originate with the cow, from natural causes. Would it not be more consistent with sound reasoning that these bacilli are created in the human system, under natural conditions, or from a certain inherited weakness?

Dr. Robert Lincoln Watkins, professor of hematology in the New York Eclectic College, and one certainly possessing authority on blood disorders, says that tubercles are found in the blood previous to the appearance of the bacillus, that the bacillus is the result and not the cause of the disease, and that tuberculosis is neither infectious nor contagious.

Furnishing milk from tuberculin tested cows is a matter that should be left entirely to the dairymen. Patrons who desire and can afford to pay the cost of milk from cows that have not reacted under tuberculin tests, will find someone who can fulfill their wants, as a business undertaking, without requiring all the dairymen who contribute to the city supply, to have their cattle tested. If users think milk is injurious to children from cows not tested for tuberculosis, this can be remedied by the method of pasturizing the milk, and still give to the public, not able to buy milk at greater cost, cheap milk. The plan proposed by some of our dairymen, who are located near a profitable market for their products,

asking the state to reimburse them for their losses of cattle, is a burden on tax payers that is unjust and should not be considered, until there is evidence beyond question of the reliability of the tuberculin test.

F. J. MEAD.

Tacoma, Wash.

#### FOOT AND MOUTH DISEASE KEPT OUT OF WASHINGTON

Mr. H. S. Royce, of Tacoma, heroically sacrifices 90 head of valuable cattle that there may be no question but that this disease has been kept out of Washington.

Last month Mr. Royce loaded 90 head of fine Holstein cattle at Lake Mills, Wisconsin, which he had purchased last spring in that vicinity and kept there on pasture. They were absolutely free from any sign of disease. On arrival at Spokane the shipment was quarantined and a few of them showed signs of sore mouths. Dr. McFarlane said that while the per cent. affected was small, others might develop the disease in a short time. In consultation with Governor Lister Mr. Royce stated he wished to do everything possible to satisfy the farmers and the people of Washington that so far as this shipment is concerned that the state should be kept free from the foot and mouth disease beyond question or reproach, and therefore consented to the cremation of the entire lot, which after consultation was recommended.

Subsequently the cars, in which the shipments came were traced from previous service to the Chicago stock yards and evidently had been used for transporting cattle from some infected district, and put into service again without proper disinfection. The loss of this shipment represents many thousand dollars, but Mr. Royce says the stock industry of Washington is too valuable to jeopardize, even at this great sacrifice.

#### PURE BRED ANIMALS AND HIGH STANDARD OF QUALITY FOR SUCCESS

Regarding essentials for success the Hon. D. S. Troy States: I consider the most important step that we have taken in connection with our dairy was when we laid the foundation for a pure bred herd. By the use of pure bred animals a person is absolutely certain of producing cows of large capacity in dairy products, providing he is a careful breeder, and studies well his pedigrees and the individuality of his animals. In my judgment the most important matters for the dairymen in this state to consider are better dairy animals and better dairy products. In dairy animals we want large producers of cream and butter; in dairy products we want an article that will excel any article of foreign make. If we keep those two things in mind, I believe we will be in a position to compete with the world, notwithstanding the fact that labor conditions are much higher than they are in foreign countries. Every individual dairyman in this state has his part to perform, and if he will take an interest in his work and put forth his best efforts to produce good dairy animals and to deliver to the factories good milk and good cream, there will be no doubt about the position this state will occupy in the dairy world. Yours very truly,

D. S. TROY.

## BURNAMOOD FARM

REGISTERED HOLSTEINS

Offers bull calf eight months old and well grown. He will be a credit wherever he goes both to me and his purchaser. He is a first class young show bull. His dam has an A. R. O. record and his sire is a son of imported "Karel Bos." He is marked about evenly black and white. He will be sold with a guarantee to please. Price on application.

## BURNAMWOOD FARM

J. C. BURNAM, Proprietor

SNOHOMISH WASH.

## The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm.

Write for prices on trial lot shipments.

THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.

### PUGET SOUND HERD Holstein-Friesian Cattle Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

75 A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishop, Chimacum, Wash.

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50 Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unopened pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

### REGISTERED AYRSHIRE BULL FOR SALE.

Age 3 years. Write for particulars and price.

F. O. HALL Sedro-Woolley, Wash.

Editor Northwest Horticulturist and Dairyman:

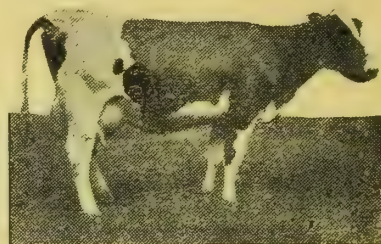
Judging by the numerous inquiries received, we believe that a statement of the Potash situation may be of interest.

At the outbreak of the war the shipping season for Potash from Germany was at its height, but since then the shipments have been made only in limited quantities. The prospect, however, is that they will increase as time goes on. Potash is not contraband of war and none of the nations at war objects to its movement in neutral ships. There is, however, great difficulty in securing railway and river equipment to move it from the mines and storehouses to the coast.

The mines are in good condition and enough workmen not subject to military service are available to keep them in operation.

Most of the leading fertilizer manufacturers have agreed to utilize their present supplies of Potash in the effort to supply fertilizers with at least 2 or 3 per cent of Potash next spring and the supplies on hand at the outbreak of the war were said to be sufficient for this purpose. There is therefore no reason why farmers should not secure some Potash.

H. A. HUSTON.



## REGISTERED HOLSTEINS

FOR SALE

Young cows and heifers and a young bull, all out of A. R. O. dams and high record sires. Write for prices and further record.

J. H. De Hoogh & Sons  
Twin Brook Stock Farm  
LYNDEN, WASH.

### AUCTIONEER WM. ATKINSON

Vancouver Blk., Vancouver, B. C.  
Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

### YEARLING JERSEY BULL CALF

Sired by a son of Eminent and out of an imported cow with authenticated test of almost 600 lbs. butter in eleven months. This is a show calf and of good size. Price \$125.

DAVID C. DILWORTH  
Buckeye, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

GUERNSEYS — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.

### HOPE FARM GUERNSEYS

Some very choice youngsters for sale at reasonable prices; pure bred, prize winning stock. Write for particulars.

H. B. DOUGLAS, Prop.  
Ferndale, Wash.

HOLSTEIN BULL — Sir Yakima Korn-dyke, sired by Korn-dyke Hengerveld DeKol, for sale. Full particulars and price on application. L. F. KRASSIN, R. F. D. 2, Snohomish, Wash.



**JERSEY BREEDERS ORGANIZING**

The breeders of Registered Jerseys of Washington are organizing and will keep the merits of this noted butter yielding breed more prominently before the public. The present aim is for a Jersey Island type with frame of the American type. The effect is both a high yield and greater endurance.

This type was prominently shown at several of the fairs last season, particularly exemplified in Mr. Brewer's Olympia's Fern, also the cow of J. H. Taylor, Montesano. On senior cow and sire Mr. Brewer easily takes first place while on young cow and young sire J. H. Taylor not only had first place but good prices offered but declined to sell.

These two Jersey herds are making Chehalis county famous and more world records may be expected in the near future.

Mr. Chas. Richardson, Tacoma, has made some excellent selections of the Island type and was given first place on a yearling heifer very promising as a great producer.

Jersey breeders will do well to continue keeping up a high standard of efficiency and strong rugged form. A large milk flow seems to be required by the people of this state.

**Dilworth's Jerseys.**

Mr. D. C. Dilworth, Buckeye, Wash., has 13 fine Registered Jerseys of which 11 were put on official test and all will qualify.

**CALF MEAL SUBSTITUTE**

"One of the greatest wastes on the farms of the Northwest is the indiscriminate slaughter of young calves, and this slaughter continues although the price of beef and dairy cows is higher than at any other time in the history of this country.

"A general opinion prevails that it does not pay to raise calves; this is true qualified by adding—with butter fats. It is a fact, of course, that dairymen cannot afford to feed whole milk to the calves, for it is more profitable to sell it to the creamery or condensary, but it does pay splendidly to raise calves on a proper milk substitute.

"Thousands of farmers and dairymen are now raising beef and dairy stock with practically no milk whatever, and judging by the great number of inquiries and orders from new customers, it is predicted that this method will soon be almost universally used.

"Few localities are blessed with so many advantages for dairying as the Pacific Northwest, and we believe that it is destined to lead in that industry. To a great extent the future of the dairy business depends upon the number and quality of the stock bred and raised by the dairyman.



One of the splendid heifers of A. R. O. breeding on the farm of A. E. Smith Company, Sumas, Wash.

**Holsteins of Pontiac and Hengerveld Dekol Breeding**

We offer for sale some surplus heifers, a few cows and very choice young bulls, ready for service, all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows. We have two herd sires—Sir Korndyke Pietertje Hartog whose sire is closely related to King of the Pontias; his dam is out of Rag Apple Korndyke breeding. The other herd sire is a show bull descendant of Paul Cornucopia and Netherland Prince, and his dam is from high record breeding.

We have a large herd, mostly A. R. O. cows doing practical and profitable dairy work, and are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

"To insure success, the dairyman must raise good calves from stock that has proven its worth, rather than buy cows at exorbitant prices, which may prove dear at any price.

"Dairymen who have been reluctant to adopt this method, being doubtful in regard to results, or fearful that it would cause undue annoyance or trouble, have, after giving calf meal a fair trial, almost invariably become regular customers.

"When a good brand of calf meal is once used it is seldom discarded, and the number of calves raised is increased, for it is the most simple and efficient manner of raising good calves. The cost is slight and the profits great.

"The old saying that it does not pay to raise anything unless it is good applies especially to calves. Good stock only should be considered for either beef or dairy purposes. With the right kind of a calf, a modest estimate is that it can be raised, and raised right, at a cost not to exceed one-third of the cost of raising it on whole milk."

The above is one of the chapters in The Chas. H. Lilly Co.'s book on the reason for Calf Meal. It goes on further to say and explain how much is to be expected of their new cooked calf meal which they feel is going to revolutionize the raising of calves by making it more profitable for the dairyman to raise them than to kill them at birth. Another chapter goes on to state:

"Calf meal makes it profitable for the dairyman to raise calves, instead of killing them at birth, to the vealing stage, or for beef or dairy stock.

"Calves eat calf meal with great relish, and thrive upon it even better than upon whole milk. Preparing and feeding calf meal is a very simple matter if used as suggested in the following pages, and raising calves is not nearly as annoying as many persons imagine.

"One pound of this Calf Meal makes a gallon of milk substitute, fully equal to whole milk for raising calves.

"Lilly's Calf Meal is made from the best materials, correctly blended, thoroughly cooked, and the food value is practically the same as whole milk. It analyses 25% protein, 45% to 50% carbohydrates."

**Registered Jerseys****BERKSHIRE SWINE**

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

**A. G. WOODWARD**

Route 1, Box 12 Fairbanks, Wash.

**JERSEY BULL FOR SALE**

Eminent Inland Empire, out of Eminent and Golden Fern's Lad, which has over 60 daughters in A. R. O. class. A splendid animal, having made good in my herd. Price reasonable. Full particulars on request.

**NELS-JORDAL**

R. F. D. 2 Lynden, Wash.

**Crystal Springs Farm**

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

**GUY C. CHAPMAN,**

Pomona Wash.

**JERSEY BULL CALF**

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

**JEFFERY HILTON,**

Marysville, Wash.

**GOOD REGISTERED BERKSHIRES**

Choice pigs, \$10 each at weaning time W. D. GOOD. Mt. Vernon, Wash.

**FOR REGISTERED DUROC JERSEY**

bred sows and male pigs, write McK. Edwards, Valley, Wash.

**Poland China Boars**

Have some good ones 4 months old, also boar pigs of good breeding. Gilts all sold.

**F. C. BRUCE**

Grandview, Wash.

**Purebred Durocs**

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

Write today.

We buy and sell large quantities of choice hams and bacon. Quality is our motto.

**AUGUSTINE & KYER**  
115 First St. Seattle, Wash

**BERKSHIRES HOGS for sale**

A fine brood sow which raised 35 pigs in two litters in one year; some August gilts; 2 March boars and 1 herd boar, safely crated, including papers. All priced low for quick sale.

If interested, write at once.

**PETER HANSEN**

Box 62, East Stanwood, Wash.

**Duroc's Profitable**

My 7-month Durocs made world record gains this season. The short feeding time is where the profit is derived and there is money in hogs in the Northwest. Do you want a few youngsters, then write today.

**JNO. B. PETERSON,**

Mountborne, Wash.

**FARRAR'S LIFE OF CHRIST.**

A book which should be in every home, is sent postpaid including one year's subscription to this paper for \$1.25. Northwest Horticulturist & Dairyman, Box 1604, Tacoma, Wash.

**BERKSHIRE PIGS**

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**

Route 1 Everson, Wash.

**REGISTERED DUROCS**

(Immune to Cholera)

All ages for sale, male or female, from prolific families

Shamrock Wander heads the herd.

Shamrock Daisy farrowed 12 pigs.

Shamrock Rose farrowed 14 pigs.

Selah Agness farrowed 16 pigs.

Write for prices.

**A. H. IRISH, Wapato, Wash.****"B. K. M. BERKSHIRES"**

Write for Prices

**WOODLAND FARM**

Lacey, Thurston Co., Washington



# STOCK

## DRESSING THE HOG

Kill your hogs in the cool of the evening, using a knife with a 5-inch or 6-inch blade; make sure that you sever the wind pipe but do not attempt to reach the heart as there is no advantage and every risk of damaging several pounds of shoulder meat, says J. F. Taft, in the Home-stead.

"Use the water for scalding about 130 degrees Fahrenheit. You should be able to pass your hand through it five times without burning; too hot water sets the bristles and the dirt also—get the water at the right heat and the bristles and dirt will slough off more easily."

"Split the hog full length and remove all except the kidneys. Cut right through the lower jaw to the teeth and be sure to take out the tongue and windpipe. If the animal is exceptionally fat, it is wise to split through the backbone from the inside, between the shoulders, to let the animal heat escape from the heaviest part of the body; this will prevent the meat from turning sour. Rinse the carcass well; wipe it dry; spread it open and allow to hang overnight.

Recently a shipper sent in ten hogs and visited us when the hogs were hanging on our racks. We had an opportunity to point out to him that, in failing to remove the tongue and windpipe, he had allowed great damage to occur during transportation; the blood from the throat cavity had run back over the leaf lard, spoiling the appearance and diminishing the selling value considerably; needless to say our friend was careful next time to remove the tongue and windpipe.

The main object in splitting all the way is to make a thorough job and leave no place for a blow fly to deposit eggs. This pest is very often the destruction of good meat; it is well known that a few hours only are required to hatch out a myriad of maggots in a freshly-killed warm body.

Another important point is to avoid exciting the hog before killing, as excitement always produces fever.

As regards shipping it is very essential that hogs should be carefully wrapped in burlap especially in bad weather.

## HOG RAISING INCREASED

The coast section is now developing more of the clover and mixed grain fed hogs than ever before. The

market is sufficient to take all hogs offered at any time and there are good tracts of grass and grain such as oats, barley, peas and some artichokes grown, making an excellent bacon hog.

At the Western Washington Fair, Puyallup, T. H. Brew, president of the Brew Manufacturing Co., had a good exhibit of Poland Chinas.

The Woodland Farm, Lacey, Wash., won 5 firsts and 4 second prizes on Berkshires, and they had some choice animals. J. P. Jones, a beginner, won second on a good mature sow.

Henry Berger, Spanaway, took all prizes on Chester White, making a good showing, and John George, Renton, Wash., carried off all prizes on Duroc, all good specimens.

## REGISTERED HORSE EXHIBIT

At the Western Washington Fair, Puyallup, Mr. Charles Richardson, Tacoma, exhibited a fine Registered Percheron Stallion well worthy the first prize awarded.

D. LaPlant was given first prize for an older registered stallion same breed, and Albert Gehrke, Rainier, was awarded first on French coach, another beautiful animal.

Horse raising has not gone out of date but the breeding tendency is for good form, sinew, conformation with clean sound limbs, not over fleshed in body as has been the case with too many of the imported animals.

## HORSES FOR THE ARMY.

For the mounted service, three gaited, or walk, trot and canter horses only are desired, says a writer in American Cultivator. The cavalry horse when mature should weight from 950 to 1100 pounds and be of solid color, though white markings are not objectionable; any color except gray and white is acceptable. The horse should be from 15 to 16 hands in height, sound, well bred, and of short coupled, weight carrying type. Until recent years, all horses purchased for the army were more or less mature, all being required for immediate service. But since the establishment of remount depots, young horses three and four years old, or even younger, are purchased, sent to remount depots, where they are handled and issued to the army after one year's work. It has been found that, rationally handled at the depots, young horses give promise of longer service than mature animals. Young horses are purchased broken or unbroken, but are preferred halter bro-

## BRKSHIRES IN DEMAND.

Mr. Chas. M. Talmadge, of Newport, Wash., has been very successful in the raising and sale of Berkshires. Recently he sold to Morris R. Scott, of Twisp, Wash., Laurels' Robinhood, the young boar that won first in the under-six-months class at Spokane and also at the Montana state fair at Helena this fall. Mr. Scott has but a small herd but they are good, having purchased his foundation from Chas. V. Slusser, of Waterville, Wash., whose stock was largely of



A correct type of hog house, with plenty of light and no drafts.

## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

### Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body  
It is penetrating, soothing and healing, and for all Old Sores, Bruises or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for  
Sore Throat  
Chest Cold  
Backache  
Neuralgia  
Sprains  
Strains  
Lumbago  
Diphtheria  
Sore Lungs  
Rheumatism  
and all Stiff Joints

#### REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills." OTTO A. BEYER.  
Price \$1.50 per bottle. Sold by druggists or sent by express prepaid. Write for Booklet R.  
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.



A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

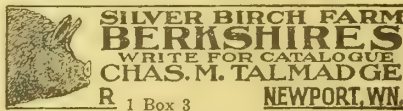
Write for prices.

THE E. N. PEASLEE CO.,  
Clarkston, Wash.

## O.I.C. Hogs

### English Shire Horses

Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.



## Oregon Collie Kennels



Established 42 years.

Choice Puppies (either sex)  
Breeding Pairs  
Bitches in whelp and stud dogs for sale.

Send 2c stamp for illustrated catalog.

C. D. NAIRN  
Shadeland Farms  
E. F. D. 2  
Amity, Oregon

ken only. Until recently, geldings only were purchased for military purposes, but now mares are purchased,



DAIRYMEN:—  
write us for information about

## LARROWE'S DRIED BEET PULP

—the milk producing, succulent, vegetable feed

WE want to send you free a copy of our booklet, "Profitable Feeding." It contains valuable information about feeds and feeding—also gives facts about dried beet pulp and how it should be fed. Send for a copy today—a postal will do.



—will increase your milk supply from 1 to 5 lbs. of milk per cow a day, and keep your cows practically free from udder troubles.

It is simply the pure, shredded root of the sugar beet with only the sugar and water extracted. (Can also be had with molasses if desired.) Swells to six times its original bulk when moistened—thus furnishing as great succulence as silage and more than five times as much nutriment. It is also a splendid feed for fattening; for horses, hogs, poultry, etc.

THE  
Larrowe Milling Co.

607-608 Central Building,  
Los Angeles.



TRY 1 SACK on a cow whose milk record you know—and watch results.

ORDER  
FROM  
YOUR  
DEALER  
TODAY

although geldings are considered by army officers as being more desirable. The artillery horse should be of any

Lovejoy, Royal Lee 8th, and Laurel Champion breeding, and in purchasing this outstanding son of Laurel Champion at \$125 to head his herd, he displays excellent judgment. Few better Berkshire boars have been produced in the Northwest than Laurel's Robinhood. Long, deep, ideal head and ears, high tail setting with strong arched back, and good feet and legs, gives one about all that could be desired in a herd header. A litter mate as a barrow won first at both Spokane and Montana this fall. Pretty good evidence that this is the type that both the breeder and the packer are looking for."



# Registered

# GUERNSEY COWS, HEIFERS, BULLS

Here are some choice Guernseys for those desiring registered cattle of this breed:

## BULLS

No. 23292. Imported Lord Ponchez of Follyland. Born July 9, 1912, light fawn with white markings, clear buff nose, a very large nice individual from the very best Island breeding.

No. 24844. Coquettes Boy of Long Meadow. Born Nov. 27, 1912; light fawn, white markings, clear buff nose. Medium size, an extra nice individual in every way. He is sired by Imported Majesty of the Houge.

No. 29121. Price of Arrow Farm. Born June 23, 1912; fawn with considerable white, clear buff nose, good size, very deep body and mellow skin. A very fine calf from the best of families.

## HEIFERS AND COWS

No. 26771. Franciska of Lee Farm. Born Sept. 13, 1907; light fawn and white, good size, nice form, good udder and teats. A cow capable of making good yearly record. Bred April 14, '14.

No. 39927. Imported Polly IV of the Duvaux. Born June 12, '11; orange red and white markings. Here is one from the best pedigree stock on the Island. Nicely placed teats, and surely will make good.

No. 32333. Daisy Dunn. Born Dec. 1, 1909; fawn and white, clear buff nose. An extremely nice cow in every respect. Winner of many first prizes during 1914 fairs of Pacific Northwest. Bred Oct. 13, 1914, to imported bull.

No. 36693. Imported Lady Paget II. Born Aug. 12, 1911; buff and white markings; good size, nice udder and teats. First calf in August, 1914. She is a Masher Sequel. Nothing better.

No. 36694. Imported Duvaux Rose IV. Born Sept. 27, 1911; orange red and white. A heifer of rare breeding and almost perfect conformation. Last calf in July, 1914. Not yet bred.

No. 10593. Imported Winnie II of Couerderay. Born May 20, '11; first calf in August; not yet bred. A very large deep body, nice head. A show cow; the best udder and teats.

No. 39670. Imported LaGrande XV DuBos. Born July 2, 1911; orange, fawn and white markings, a very straight, large heifer. Just dropped second calf. Not bred. This heifer was injured in stifle and has a little hitch in walking, otherwise is sound.

No. 38365. Polly of Salem. Born Oct. 12, 1911; fawn and white markings. Bred Feb. 5, '14. This is a very sweet heifer; white legs and switch. Good size.

No. 42627. Mabel of Hop City. Born May 12, 1911; light fawn and white, clear buff nose. Bred July 25, '14, to Imported Lord Ponchez. A nice milker.

No. 36791. Jean of Salem Junct. Born March 10, 1911. Bred. Fawn

and white. This heifer gave 36 lbs. of milk when fresh.

No. 41638. Katie of Salem. Born March 24, '12; considerable white and fawn. A very promising heifer.

No. 40781. Buckeye Maypole. Born January 2, '12; fawn and white. Bred April 14, '14. Extra large, straight heifer. Mashers Sequel foundation.

No. 42792. Polgama of Salem. Born Sept. 12, '12; nearly solid fawn; white feet and switch. Bred. A grand good one.

No. 38922. Juno of Middlebrook. Born Jan. 2, '12. Orange red, white markings. This heifer has the size and conformation to make a great record. A calf from her will pay half her cost.

No. 40161. Buttercup of Salem. Born Jan. 6, '12; orange red and white. A nice large heifer, straight lines and good size, and her dam's family are among the greatest producers.

No. 42182. Preel of Follyland. Born Sept. 19, '12; orange and white markings. Fresh Oct. 8, '14. Here is as near a perfect model of a heifer as one ever sees. She is from Imported Raymond Preel, and from Imported France XXIV. Not bred.

No. 42591. Fille DeLidda. Born Oct. 29, '12; color, orange red. An extra fine large individual, extra good breeding with good ancestors.

No. 42486. Lottie C. of Hop City. Born June 16, '12. Bred July 13, '14, to Imported Lord Ponchez. A nice sweet heifer; best of teats and udder, clear buff nose.

No. 50652. Hattie C. of Hop City. Born Nov. 20, '13; orange red and white. Bred Oct. 9, '14. Here is a nice kind to buy and grow her to suit yourself. Her whole life before her.

No. 49937. Fountain Queen. Born Oct. 17, '13. Dam Imported, sire one of the best bred bulls in New York. Not bred.

No. 52920. Holdens LaGrande. Born Oct. 9, '13; orange and white markings. Dam Imported, sire Varanges Holden of Edgewater, noted bull bred by Mr. Benham, of New York. Not bred.

We also have some choice grades.

## HOLSTEINS

We have sold a large number of this breed during the past month, but can supply a few orders with registered cows and bulls of high record breeding. Full description and prices of these are given in a printed list which we have recently issued. Send for a copy if interested.

Farm 3 blocks from depot, 28 miles south of Seattle and 12 miles east of Tacoma, on the main lines of the Northern Pacific, Great Northern, O.-W. and Chicago, Milwaukee & St. Paul R. R. All trains stop.

Please write or make appointment.

## B. S. FRYAR COMPANY

## Sumner, Wash.

solid color except gray and white, though white markings are not objectionable. When mature he should be from fifteen and one half to sixteen hands high and from 1150 to 2000 pounds in weight. He should be sound and well bred. The real work of the artillery horse is team work. He is expected to pull his share cheerfully in a six-horse team, dragging over bad roads or no roads at all a field gun or an ammunition caisson weighing, with all extra equipment, nearly 5000 pounds. The near horse of each pair also carries a driver, who guides this horse and leads the off one. Each animal must be able to work anywhere in the team; and they must be able to take a good roadwalk and to maneuver at the trot and gallop over rough ground. The artillery horse, therefore, must have more weight and draft strength than the cavalry horse, yet must not be too rough and clumsy, and must

pick his feet up well and more quickly when necessary. The War Department issues printed specifications

for the various kinds of horses and mules purchased for military uses, which can be had for the asking.

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

## Feeding White Leghorns for 250 Egg Production

Written for the Northwest Horticulturist & Dairyman by Mrs. Geo. R. Shoup.

A year ago, the heading would have been "Feeding for 200 Egg Production," but we have so many birds which have laid from 250 to 300 eggs each as pullet year records, that we shall feed hereafter for 250-egg production.

In feeding poultry it is as important to know why, how and when to feed as it is to be faithful in the actual feeding. Two people given the same grains and other feedstuffs may obtain exactly opposite results. There is only a limited list of grains, mill feeds and green stuff, at best. So it takes skillful feeding as well as "bred to lay" birds to produce the

maximum eggs per bird. The underlying principle of feeding for eggs is to feed all the bird can digest and assimilate—no more, no less.

Because animal nature is to satisfy hunger, give all the bulky food that will occupy their time and give them exercise, without fully satisfying the appetite, in the morning, thereby developing the hearty relish for the heavy grain meal given from 3 to 6 p. m., according to the season. By getting the bulky food before the birds in the morning, and the concentrates as close to roosting time as possible, we induce the fowls to get the "toy balloon" crops with which to make eggs during the night.

We begin the day by scattering germinated oats in the four to six-inch litter about 6 a. m., the year round, using gasoline lanterns to light the houses during the dark winter days. The oats, dry, do not tempt the hens to come off the perch; boiled, the germinating juices of the grain are lost, besides its having to be fed in troughs; while germinated (so there is a bunch of rootlets out, with the sprout still under the hull) the grain is in its most appetizing form, soft of hull, delicious with the tenderness of young growth, and nutritious to the full value of the grain. This form of oats fed in the litter, keeps the birds active, and in good condition generally, the germinating juices acting as a digestant. Clabbered skim milk or buttermilk is also fed in the morning. Either of them acts as an appetizer, a digestant, and bowel regulator, thereby providing not only a food rich in animal matter, but a food that helps

## CHOICE TYPE

### BERKSHIRES

Some good Registered Berkshires at pasture on the Silver Birch Farm, owned by Chas. M. Talmadge, Newport, Wash. Two new herd sires have lately been added, one Matchless Baron Duke breeding from Rockwood Farm, Ames, Iowa. The other is of Artful Belles Rival 3rd breeding and both are strong in the blood of Lord Premier.





to make chicken medicine unnecessary.

Enough grain is fed at night in the litter to give not only a plentiful supper, but also enough to interest any hen hungry enough to search and scratch for it the next day. It is a serious mistake to give a scanty evening feed. Proportion the scratch feed, two measures of sound wheat, one measure of cracked corn and a quarter measure of sunflower seed; mix and feed in quantities suited to the size of the flock.

We see that all grain is free from mold, which is fatal to fowls. The sunflower seed keeps the plumage in good condition and renews worn-out feathers and is not extravagant at 6 cents per pound.

After the birds have eaten all they evidently intend to, for the night, we bring on their desert, made as follows: Take the table scraps, and water salted as for human cooking, allowing a quart of this wetting to every hundred hens; add enough dry mash mixture—bran by measure two parts, wheat middlings 1 part, feed cornmeal one part, soy bean meal one-half part, and either ground fresh liver or meat, fresh blood or green bone (this last tri-weekly) one-fourth part—to make a lumpy, crumbly mash. Add coarse sand at the rate of a bucketful to one sack of bran, and the moist mash is ready. Every laying hen will line up at the trough, round out her already well filled crop and sing at the top of her voice if the mash is palatable.

In winter the gasoline lanterns are lighted at dusk, and about 7 p. m. kale or other succulent green-stuff is fed in sufficient quantities to leave over enough for a light breakfast, before the germinated oats are brought on the next morning.

In the breeders' houses where lights are not used, we put greens in the crop after dark for the next morning.

In connection with the above hand feeding, dry bran, grit, charcoal and

shell are hopper fed. Let any hen house be without a constant supply of these hopper feeds, and the flock develops bowel trouble, liver trouble, ovary weakness, lays soft-shelled eggs, or none at all, and is put partly or wholly out of laying condition.

Dry bran fed to chicks from the time they are two days old until the birds are finally disposed of, gives a bulky nitrogenous food, satisfying to the appetite and on hand at all times. Bran is also the gauge for the grain feed. Where an extra large amount of bran is eaten, we know not enough grain has been fed, and vice versa, where very little bran is eaten, the flock is getting more hard grain than is good for their digestion.

Feeding as above outlined, and knowing how to feed, why to feed and when to feed, we get eggs when we want them—that is all the year round.

#### CONCERNING THE EARLY PULLETS.

Theoretically, April is the ideal month in which to hatch out the chicks of the lighter breeds, but practically we are inclined to believe that under average circumstances the February hatched pullet is equally profitable. To be sure a little over a third of the early hatched pullets may be moulting all the time—but the rest are laying an abundance of 40 and 50 cent eggs. Also April hatched pullets have been reported moulting when they ought to be laying.

Some of our early hatched pullets which begin to lay in July and August are still laying and a percentage of those may be expected to lay right thru without moulting. Of course there were some that went into the moult without laying an egg. We don't know at present to what extent the feed and care may influence the moulting habits of the individual but individuals that demand better care than we give the average are liable to find themselves in

## The Fresh Air Brooder Stove



THIS is our NEW SELF VENTILATING BROODER STOVE. AUTOMATIC TO THE MINUTE. Economy's climax. No more crowding around the stove at night. HEAT EQUAL in all parts of stove room. Petaluma's severest critics pronounce this new wonder the peer of all brooding systems. Bank and our personal guarantee always. Get our latest catalogue. We can help YOU.

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#### THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

#### EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES  
SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK.  
Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.

THE TANCRED FARMS.

KENT, WASHINGTON.

#### DUCKS

### The Best In White Runners

WE ARE NOW OFFERING FOR SALE

### Drakes, Trios & Breeding Pens

Bred from the Best American Strain

Write for prices and booklet

E. E. BLOOMFIELD

Hillhurst, Wash.

Box 22D

#### EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds. \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

**FRED A. JOHNSON**

518 35th St., Tacoma, Wash.

READERS are requested to send information to us pertaining to the best methods of practical co-operation. N. W. Horticulturist Box 1604

the fattening coop—the path from which leads not to the nest.

We have also heard complaints from our friends that their April hatched pullets were slow starting. The October and November prices of eggs offer good proof that others are having the same difficulty.

The fact of the matter is that na-

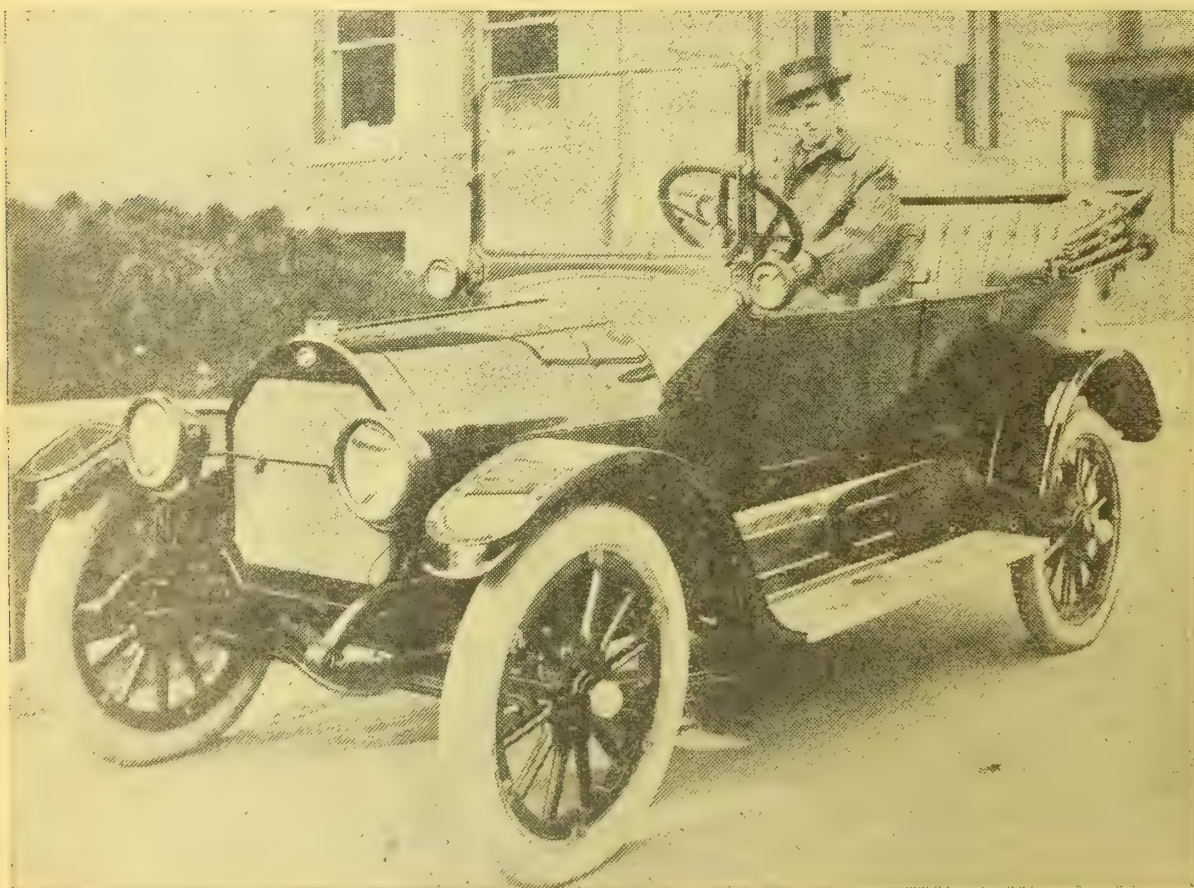
ture protests against this egg laying business during the fall months. Thus the pullets will either commence to lay before that time or they will take a little longer to mature.

This past season our first hatch came off on January 29th and after that our hatches came off as fast as our brooder capacity would permit. The bulk of our chicks were hatched during February, March and April though we had few off in May and June.

Unfortunately we have not as yet been in a position to trapnest all our pullets as they continued laying, but judging partly from those that we are trapnesting and the general aspects of the egg basket the number of pullets that began laying during the month of October was considerably less than the theoretical number.

Now we do not wish to give the impression that we are opposed to April hatching but we question if the April hatched birds are more profitable than those hatched in February or March. The early hatched pullets possess one advantage in the fact that they are sufficiently mature to make good breeders the first season and in addition we have found that their trapnest records make it possible to determine with considerable accuracy as to their laying quality. Those about which there seems to be any doubt need not go into the breeding pen. Furthermore being pullets their egg yield will be appreciably heavier at a season when the old birds have not commenced to lay in earnest.

Another point to be considered is the February hatched broiler. About them there can be no question. We



The 1915 Overland, a very popular car among farmers everywhere. Sold at moderate price, by the Pacific Car Company, Tacoma, Wash.



have found that they bring from 30 to 40 cents or more per pound while the April hatched broilers seldom bring much over 20 cents and the May and June hatched broilers must be sold at a loss for 15 cents or even less per pound.

It is surprising to note how the early hatched chicks seem to and really do thrive right from the start in spite of apparently unfavorable weather. The moist condition of the ground and the abundance of earthworms and similar luxuries in their bill of fare not to forget the tender sprouts of plants and the like, must account for this fact. On the other hand in this Puget Sound section we have found it difficult to raise a high percentage of fully developed chicks from hatches coming off in June, even with the best of care that we have been able to give them. Some are inclined to blame the breeding stock by drawing the conclusion that they are weakened after the seasons heavy laying.

While we have not sufficient data to disprove the statement, still we do have data that by no means favor it. Thus we apparently get just as good hatches late in the season as at any time earlier in the season and the chicks are just as lively from the start. In cases where the late chicks have been found to be weak when hatched we are inclined to believe it due to faults in the incubation in cases where the incubators are not properly protected against wide temperature fluctuations. On account of the heat given off by the eggs themselves there is no incubator made that can be properly regulated when exposed to a temperature of 90 degrees or above. We have had some sad experience along this line. We have also had the pleasure of seeing our incubators run almost like clocks in a properly constructed incubator cellar.

For some reason or other we have gained the impression that late hatched Barred Rocks apparently do better than White Leghorns hatched at the same time. On the other hand many breeders find it difficult to get high percentage hatches from the heavier breeds early in the season. We have had that difficulty and so far have not been able to locate the trouble. The chicks that do hatch do not show any lack of vitality.

In conclusion we do not wish to attach any finality to the impressions just set forth but would rather have them considered as data pointing in the direction indicated. And furthermore the conclusions are not expected to apply except where climatic conditions are similar to those met with in the Puget Sound section.

C. WESTERGAARD,  
Hadlock, Wash.

## WINTER EGGS

By J. A. Aubry.

Many poultry raisers are getting plenty of eggs during these winter months when prices are high. The question is how? The reply is, first, correct feeding. In small flocks up to 100 fowls it is best to buy the scratch foods, mixed grains, usually sold in sacks at \$2.10 to \$2.40 per 100 lbs.

Buy the following where the flock is not over a couple dozen.

1 sack scratch, 100 lbs.; 1 sack bran and middlings; 50 lbs. either beef or

fish scraps; 50 lbs. dry cracked bone; 50 lbs. oyster shell; 50 lbs. each of grit and charcoal. Take 10 pounds bran, 10 pounds middlings and 5 pounds of either beef or fish scraps and mix very thoroughly; adding a good tablespoonful of fine dry table salt to the mixture while mixing.

This mash should be fed dry, keeping it in a suitable container before the fowls all the time.

See that they eat about 25 pounds of the dry mash mixture while they are eating 50 pounds of the scratch or hard grain mixture. The grit, shell, charcoal and dry cracked bone should be placed in separate containers where the fowls can help themselves to it, when and as much as they wish. The scratch should be fed either through the agency of a reliable automatic feeder or by hand, night and morning.

A good layer can only come by careful breeding.

It is only a question of a short time when most every egg farm will be using either the Hogan or Potter System.

The writer has used them both and finds the Hogan System of great value.

I would as well think of chopping wood with one hand as to feed a lot of hens for laying without Hoganizing them. The Hogan System is fully illustrated in the book "The Call of the Hen," by Walter Hogan. By sending the editor of this publication \$1.50 it will be mailed to you. And so strongly do I recommend this book that I want to go on record as saying that if you only keep half a dozen hens in the back yard it will more than pay you to spend a dollar and a half for "The Call of the Hen."

I am not writing this as any advertisement but am telling you how in ten minutes you may go into your hen house at night and pick out the drones from your flock of a dozen hens.

The next is housing—an unsettled question as to plan. The writer favors the Wood's Semi Monitor top house not more than 16 feet deep, built 2 feet off the ground with a good wooden floor and 2 inch poultry netting all around to the ground which affords free circulation of air to keep out dampness.

Whatever style of house is used, allow 40 per cent. of the front to be open, have the walls perfectly tight and no windows.

Next is the care. Regularity in feeding, pure water and cleanliness also a watchful eye to guard against contingencies.

Strict attention to details is positively necessary for success. Aside from table scraps it does not pay to cook food for poultry. Those who do not wish to buy scratch foods will get good results by mixing 25 pounds cracked corn, 13 lbs. wheat and 12 lbs. good heavy oats. If sprouted, a larger proportion of the oats can be fed in the fowls ration with profit.

Breeding for Eggs, is the subject for next month.

## SHOW DATES

Colfax—Dec. 22-26; W. J. Scott, Secretary; H. H. Collier, Judge.

Aberdeen—Dec. 23-26; J. E. Fowler, Junction City, Secretary; W. S. Russell, Judge.

Tacoma—Dec. 29-Jan. 2; J. A. Caddy, Secretary; W. S. Russell, Judge.

Walla Walla—Jan. 12-17; Theo. Hewes, Judge; J. H. Levy, Secretary.

Poultrymen will ask for a law to compel renovated eggs to be labeled as such so consumers will know what they are paying for.



One of the prize Berkshires at the Woodland Farm, Lacey, Wash.

## Auction Sale

AT THE JOS. RIGNEY PLACE

Situated One Mile East of Lakeview

Take Spanaway car from Tacoma, get off at Military Road, where we will meet you and automobile you to the place.

SALE AT 1:30 P. M.

SATURDAY, DECEMBER 19th, 1914

20 heavy dairy type Milch Cows; 10 Durham Heifers, "bred"; 1 Durham Bull; 1 Holstein Bull; 5 Heifer Calves; 16 Cows and 10 Holstein Heifers, "bred"; 1 Gelding, 9 years old, sound; 1 well mated pair of Draft Mares, 4 years old; 1 Mare, 9 years old; 6 Work Horses; 4 T. C. Brood Sows of extra quality, all due to farrow in about 4 months; 1 Duroc Boar, 1 year old; 4 dozen Chickens; 16 Geese; Vehicles; Farm Tools and Dairy Equipment; 1 Wagon, good as new; 1 Buckboard; 1 Buggy; 1 set Double Harness; 2 single Harness, light; 1 single Harness, "heavy"; 3 Plows; 1 J. Deere Sulky, good as new; 1 Cultivator; 1 Shovel Plow; 1 Separator; 4 10-gal. Milk Cans; 2 5-gal. Milk Cans; Milk and Cream Pails; Kitchen Utensils; and many other articles too numerous to mention.

This herd was gathered together by Dick Frederickson.

Lunch will be served.

E. C. COX

WM. FITZHENRY, Auctioneer  
Tacoma, Wash.

## EGGS OR CASH

Directions for getting hens into good laying condition in shortest time possible is given in every package of our Herculean Strike Breaker. Sold by dealers, or write to manufacturer for literature, etc.

E. H. ROMBERGER

Sta. F. Seattle, Wash.

## Anniversary Renewal Blank

Those who have not already renewed their subscription will find this form convenient.

One year, 50 cents; three years, \$1.00.

Northwest Horticulturist & Dairyman,  
Box 1604, Tacoma, Wash.:

Inclosed please find ..... in payment for which you are to advance my subscription ..... years.

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## COCKERELS PEDIGREED for EGGS

From Trapnested

S. C. White Leghorns

and

Barred Rocks

Day-old Chicks and Hatching Eggs

Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

Dept. H HADLOCK, WASH

## COCKERELS FROM GREAT LAYERS

Higher grain prices necessitates greater production per bird. In addition to correct keeping and feeding the surest way to get more eggs is to breed from pedigreed cockerels which have 200 to 250 egg trap-nested White Leghorn mothers. Cockerels of this class sold at \$3 each.

GEO. R. SHOUP

Route 3 Lynden, Wash.

## Baby Chicks

After eight years of the most careful selection and breeding, I have now 2400 S. C. White Leghorns in my breeding pens. They are bred for egg production, vigor and good size. I guarantee safe arrival to you of any number of chicks you may order and also send FREE a book on feeding and care of them. Send for my free catalog now.

OAK HEIGHTS POULTRY FARM

Capt. A. Waldwick, Prop.

Route 3, Box 670 Tacoma, Wash.

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL  
Puyallup, Wash.

## Rocks

BARRED WHITE,  
PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. P. ALWARD  
Orting, Wash.



# PLANTING FOR FUTURE MARKETS



About 25 to 30 years ago, corn, wheat and oats were selling in some of the Middle States at or below cost of production. The markets were gradually enlarged, the prices increased and became more staple.

Today, and for several years past, there has been a fair margin of profit in grain farming.

The fruit growing industry is now undergoing the same process of market development. It takes time to standardize and to create a satisfactory and economical system for reaching consumers, particularly those located in rural districts where fruit is not generally grown. The world wide dried fruit market for apples and pears has not yet been touched by fruit growers of the Pacific Northwest. When conditions become normal again throughout the world, those who have bearing orchards and are prepared to meet the wants of the markets can hardly fail to profit well from the trees they have planted and cultivated.

The present tendency is to set trees a little farther apart than was formerly the practice, and diversify as may be practicable, with poultry, hogs or dairy cattle.

But the natural conditions for the production of apples, pears, other tree and bush fruits are too favorable in the Pacific Northwest to stop planting. **SUITABLE SELECTIONS OF VARIETIES FOR A GIVEN LOCALITY, OR THE SELECTION OF A SUITABLE LOCALITY FOR GIVEN VARIETIES ARE IMPORTANT.**

We have made the production of trees and plants a life long study, and with a trained force covering the Northwestern States for the past 25 years, are in position to give information based on the experience of the successful growers.

Our literature on the planting of fruit trees of all classes, of Franquette and other walnuts and on the ornamentation of the farm door yards are at your command for the asking.

Do not fail to get a copy of our booklet on choice and new roses. It is beautifully and clearly illustrated showing the forms of choice varieties in the best of the printer's art, and please mention this paper when writing.

With kind acknowledgments to our many patrons who are readers of this paper for past favors and with kind wishes for a Merry Christmas season, we further hope you may enjoy a Happy and Prosperous New Year.

## OREGON NURSERY COMPANY

ORENCO, OREGON



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., JANUARY, 1915

No. 1

## DAIRYMEN EXPRESSING THEIR WISHES.

The dairymen of Washington represented by their state association at the annual meeting in Chehalis last month have expressed their views and wishes very emphatically on three questions. First, that it was a mistake for the United States Government to adopt a policy which permits dairy and poultry products produced under summer conditions in any foreign country to come into competition with the same class of products in this country, produced under conditions involving high cost of feed, thus decreasing the profit margin of the home dairymen and poultry raisers, and at the same time imposing a direct war tax for maintenance of the government. Senator D. S. Troy, a leader of the democratic party in this state and Hon. Wm. Bishop prominent in the republican party both denounced such mistaken policy in no uncertain terms when discussing the resolution, pledging efforts to repeal such law, which was unanimously adopted.

Second, no radical legislation in the attempt to control tuberculosis is wanted by the dairymen at this time for the reason that a wide difference of opinion as to methods of procedure on the part of authorities, both in this and other states, prevail. The negative results obtained from compulsory tests indicate that the experiment stage has not been passed; but the dairymen unanimously expressed their desire for an educational campaign conducted through the state dairy department for the purpose of eradicating as far as possible, tuberculosis from the dairy herds of Washington.

Third, in the matter of cooperation and credit extension the dairymen's association expressed a desire that those in charge of extension work give more attention to the standardization of products and of methods,

to the work of conducting cow testing association and to respond to the need of communities ready for organized effort both for marketing and for credit extension by reporting the same to the proper agencies through which such work can be accomplished.

Those who own pure bred cattle have authenticated records, obtained or created mostly at their own expense, but there are thousands of dairy cows the owners of which would benefit themselves and their communities by conducting tests thus placing themselves in position for credit with which to procure improved dairy appliances and pure bred sires.

In expressing these views the dairymen are working on the basis of mutual advantage to themselves and the public. With a prosperous dairy industry in the country the urban population cannot fail to benefit.

## GOVERNOR LISTER'S MESSAGE.

Efficiency based on a reasonable compensation and appropriations within bounds is the tenor of Governor Lister's message throughout. From the executive standpoint the government machinery in its various branches has been in good running order and the service generally satisfactory.

In the agricultural department there was considerable experiment. The Governor personally took part in what proved to be the A. B. C. of co-operation with fruit growers in the Yakima valley, resulting in better work than if the state had undertaken to do a necessary task alone. The state fair was another example. The dairymen would like to have the Governor undertake and go through the same stunt in the development of the dairy industry. The money now appropriated for general work throughout the state in this rural branch of husbandry should be made

valuable to communities when the people get together and unitedly do something for themselves. Needed cow testing work is an example of what should be undertaken co-operatively by the people and the state for that is the foundation of a successful and prosperous dairy industry. This system would include inspection and instruction to better solve the sanitary and the feed problems but money appropriated for the service of inspectors promiscuously spent does not include the individual cow test and therefore does not fix the proper foundation on which to build.

Since the Governor has passed through the primer of rural cooperation with such flattering results, dairymen are hopeful to see equally good results when he passes through the next higher grades. The future success and development of the dairy industry in the coast section is only a question of how the work is done at the present time. The message indicate the Governor has started on the right track.

## APPLE INDUSTRY OUTLOOK.

Apple growers of the Pacific Northwest have felt keenly the depression of the markets the past season. Large eastern crops, decreased purchasing capacity on the part of the masses and the European war all have been factors in the general demoralized market conditions. What about the future is a question of interest to many. Can we benefit by the experiences of others in the older countries through past years?

In many European countries and in older states, fruit growing is carried on with two or three other specialties, so that if for any reason the apple, the pear, or the prune is not profitable the second or third specialty usually relieves the situation. In cases where the orchards

are planted too closely it might be a good plan to take out surplus or unprofitable trees, but productive apple orchards of good varieties should be kept up for they are likely to average very fair returns in the future as has been the case in the past. The marketing organizations are constantly getting into shape for better work. In a few years hence apples will be sold direct to farmers throughout the states and in districts which are not growing fruit. The ten million boxes of apples grown in the Pacific Coast states this year could have been used by the people in the rural districts west of the Mississippi river, at prices fair to consumers, producers and transporters had an organization been perfected in time to handle the business. The nurserymen's system of sending out agents, for months a head of delivery, covering every part of the country district, will need be adopted by fruit growers who will thus control the price of their product until it reaches consumers, also expedite the shipping and delivery and reduce the cost of handling between the producer and consumer.

The by-products problem is also being solved. The prospects for fruit drying operations on a large scale were never better.

We will continue to grow fruit but not to the neglect of other important branches of husbandry.

## OPPORTUNITY FOR SERVICE.

Inventions by the thousands are made to take the place of laborers who are constantly being crowded out of places of employment. The result is rapidly piled up stores of production and then spasmodic, tedious waiting times for the unemployed. What to do is one of the big questions of society at the present time. People of the big cities realize that the problem of opportunity for service must be solved.



Members of the Washington State Dairymen's Association in attendance at the annual meeting held in Chehalis last month, representing an industry which will, in the near distant future, surpass in value that of lumber providing proper supervision is bestowed.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

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## PLANNING FIELD OPERATIONS.

The most successful farmers of the Pacific Northwest take time to plan the work for the coming year very carefully. Just as an engineer figures the cost of fills and cuts in road grading and the price of material for surfacing, providing for every detail contingency, so the progressive farmer takes account of a crop rotation for his particular field, which is likely to produce good yields most economically while keeping up soil fertility. The plan includes provision for employing dependable labor to the best advantage possible throughout the entire year, yet in a manner to avoid as much as possible, what is too often, drudgery.

The people who first cleared the lands of the Puyallup valley grew hops and for several years following the market was either extremely high or the reverse. They plowed and trimmed up their yards which took about half their time, then many of them were seen at the village store sitting on empty dry goods boxes shiftlessly wasting their time. Most of them have been compelled to make place for others who planted berries, and are now raising poultry or have small dairy herds in connection with their fruit growing operations. The cattle and poultry makes the upkeep of a fertile berry soil comparatively easy. There is a little available income every day even if a large proportion of the feed is bought from other producers or manufacturers through the shortest avenue possible. The intensive farmer on a very small acreage will thus afford opportunity for service for each member of a family, and those who have large enough places to employ outside help can better arrange for dependable servants than where employment is required only by spells.

Above all, seek to possess high ideals, constantly keeping along practical lines. A single idea has built big and profitable industries. Take a day off once in a while to visit the places of those who are succeeding well along certain lines, meet with others in public gatherings, at the farmers' institutes; take time to read, and pick out articles which contain suggestions that may be very helpful. Organize

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

and systematize no matter how small the farm plant and there is foundation for progress.

The two sources from which the profit margin is derived are in producing and marketing. Production and its cost are more easily governed by the farmer than are the markets but both are given their due attention by the leading men of every farm community.

"Cheaper money for farmers" is a phrase will not down. How soon it becomes a reality depends upon persistent unswerving work of the many and various rural organizations.

## COOPERATIVE MARKETING.

Investigations into the marketing possibilities of parcel post marketing have demonstrated that eggs, vegetables, fruits and butter may be shipped successfully in this way. In particular, lettuce and strawberries were found to reach the consumer in excellent condition. The formation of co-operative marketing associations has encouraged and advice furnished those already in existence by the Department of agriculture.

## LOCAL INTERIOR RATES.

At the recent meeting of the Horticultural Association, Wenatchee, Mr. Chas. Uhden made a plea for lower local rates in territory tributary to Spokane. Fruit in less than car load lots pays a traffic charge of from 25 to 50 per cent. of the average selling price for a haul of 200 miles or less. Certain readjustments, would no doubt benefit the carrier as well as the producer, consumer and merchant.

## EFFICIENCY AND THRIFT.

At a banquet given by the people of Chehalis in honor of the Washington Dairyman's Association, Mr. N. B. Coffman gave a talk on purpose and thrift which will long be remembered by the guests.

Inculcate in the child, he said, a disposition to be useful, to accomplish certain tasks, a willingness to serve and to do any work undertaken efficiently. No matter how humble the service, and at the age of 10 or 12 there is a proper foundation for good citizenship. On the other hand if the energies of a child are not properly directed during the first twelve years of his life, but allowed to become shiftless, existing without some fixed purposes his future life will never measure up to the standard to which it should have attained.

## CIVIL SERVICE EXAMINATIONS

Civil Service examinations are becoming more frequent to fill places in many departments of the rural industries. Those interested may apply for blanks to the postmaster of any of the large cities within the state or to the Civil Service Commission, Department of Agriculture, Washington, D. C.

The Farmers Extension School at Puyallup will be held February 1 to 6, inclusive, at the Commercial Club rooms. Complete information may be obtained from W. A. Linklater, Supt. Western Washington Experiment Station, Puyallup, Wash.

## FAVORABLE FOR NORTH- WEST MANUFACTURING

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ship companies of New York and Boston, the same article of freight will bear a lower rate from Pacific Coast points to the Atlantic Coast points than in the opposite direction. That virtually means a slight premium on freight going east compared with that going west. This together with the low cost of electric power on the Pacific Coast, will do much to offset the difference in the cost of labor in the various manufacturing enterprises. It is likely that some of the eastern manufacturing plants may seek locations on this coast. The labor question here will naturally take its place for adjustment along with those of emmigration freight adjustments, supply and demand, etc.

The outlook for manufacturing here in much brighter than in any time of the past and labor will be better rewarded per annum if not per diem than has been the case during the past few years. There is some prospect of wider and more dependable market for canned and dried fruits from this time on.

## STOCK BREEDERS AND RADICALS

The demands of the veterinarian department of this state, asking legislation to protect them as sole users of the tuberculin, in a law restricting its sale other than to themselves, is vicious, in itself, opening a field for charges of grafting, inasmuch as its tendency is to encourage violation of our laws. To the farmer or stock-breeder who has his whole life's earnings invested in a herd of cattle or a dairy, and viewing, as he must, the destruction that is occurring to other herds, and recognizing that the time may come when his herd will be destroyed, his duty to his family and to his creditors, will naturally look around to see if there is not some way by which he can get protection. He has been informed by this same profession that is now destroying our herds, that he can get relief by the use of the tuberculin, in such a way as it will preserve his herd from destruction. We could not commend a man for disobeying the law, but with these destructive elements in view, he would naturally take advantage of the suggestion.

Certain veterinarians have been responsible for placing in show windows upon the principal streets of our cities, the carcass of a diseased cow for the purpose of impressing upon the minds of the people that such was the conditions of the dairies in this state, and when using their milk, endangering the lives of their chil-

dren, they well knowing that the tuberculin test would have indicated this cow as sound, and healthy.

The issues are clearly defined; the battle is now for the preservation of our dairy herds, and the development of our state, on the part of the stockmen, as against radical legislation and those who are looking after their personal interests in the way of salaried positions. They tell us that while their tuberculin test is unreliable, the people demand protection. This clearly defines the situation, as it exists, and must we submit to the destruction of our herds the absolute ruin of our state, or shall we resort to other common sense methods of cleaning our herds by careful and rigid examination, and the general appearance of the dairy cow, that might be diseased, which is claimed by our worthy state veterinarian could be done?

The western part of the State of Washington is more particularly adapted to the stock raising and dairy business than any other part of the United States, owing to its climatic conditions, and the most of our logged-off lands are worthless for any other purpose. It requires very careful and prudent management to make this land pay interest on the investment and expenses. With ordinary losses which naturally follow, a ten per cent. loss each year by the tuberculin test, would absolutely destroy the dairy and live-stock business in this part of the state. It would not pay to raise even beef cattle or heifer calves for cows, as the cost of feed and help under existing conditions is so high, and this test, if applied, will destroy improvements now made, and ruin every man that has attempted to go into the dairy business on the logged-off land, and prevent further development, while it does not remedy the disorder sought to overcome.

F. I. MEAD,

Tacoma, Wash.

## PASTURING VETCH.

A subscriber desires to know if he can pasture vetch sown last fall without injure to next years crop.

H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, replies that fall sown vetch in Western Washington can safely be pastured, but it should attain a height of six inches, and ordinarily it is not advisable to pasture very closely not closer than 3 or 4 inches.

In pasturing any crop during the winter months when the ground is saturated with water, more or less



damage is done by tramping. With less moisture in the ground later in the season and while the plants are growing less harm is done, but to get a good crop for cutting in June for ensilage, pasturing any time during winter or spring should be done cautiously and sparingly.

#### NURSERYMEN'S MEETING DATE.

The executive committee of the Pacific Coast Association of Nurserymen and the California Association have jointly fixed the meeting date for 1915, August 12, 13, and 14, at San Francisco, in the new Auditorium, close to the Exposition. On August 16 is Nurserymen's day at the Exposition and Jas. A. Barr, director of congresses will give personal attention to make that day one of great interest and much pleasure to nurserymen from all parts of the world.

President John Vallance states that when the gavel strikes at the opening session, 500 members are to be in attendance, so it will be necessary to plan early for the trip and make the coming event known to fellow nurserymen. Never before in the history of the world will horticulturists have had such opportunity to see and inspect trees, plants and flowers from all climes and of everything known to production arranged under the skill of the most renowned landscape artists.

The Associated Florists of America will meet at same place August 17 and 18, and the American Pomological Society on a date closely following.

Plant and flower propagators, fruit growers and those engaged in other branches of horticulture will be present during these meetings in large numbers.

#### THE TWO-FAMILY GARDEN.

The garden spot is the most productive fraction of an acre on most farms, yet on many it is often one of the most neglected in many respects. In the hurry and rush of the spring work it is manured possibly, and plowed and planted, or partly planted, and then the care of it falls to the women and children. If the farmer were to carefully consider the proportion of the family living that comes from the garden, he would realize that it deserves much more careful attention than it receives from him, says the Department of Agriculture.

Not only can the garden be made much more profitable, and help out the family ration by increasing it and also by balancing it somewhat better, but it can be made a means of considerable supplement to the income received from the principal farm industries. By having a two-family garden—that is, raising garden stuff enough for two families and finding a customer in town or city who would like to have garden (and other) products direct from the farm at least once each week—more could be realized from the farm, both for the family and the family purse. Many a town or city housewife would be glad to receive a good-sized market basketful of fresh garden stuff directly from the producer by parcel post, express, or by direct delivery by the farmer's own conveyance—whichever would prove the most satisfactory and economical.

While there is quite a list of vegetables that can be grown in practically any garden, yet very many

gardens are limited to a comparatively small number of vegetables, a few others being included rather incidentally. In undertaking to conduct a two-family garden one of the first things of importance is to secure contact with the town or city consumer to be supplied. This is important because the city family has probably been using many kinds of vegetables that the farmer has not raised, at least not in any quantity, and the plans for next year's garden should be begun as early as possible. The kinds of vegetables to be raised should be decided upon after learning the quantities and kinds used by the city family concerned, good seed secured in plenty of time, and such work done toward the preparation of the gardens as the weather will allow. Winter vegetables, as well as those used direct from the garden in summer, should be kept in mind. These include not only such as dry navy, kidney, and lima beans, but also lettuce, kale, spinach, cabbage, celery, carrots, turnips, and the like.

In planning for a two-family garden, not only should the different kinds of vegetables be provided for but particular attention should be paid to the desires of the customer with reference to quality. Many city housewives, for instance, may desire stringless beans; when they ask for these they have in mind more a quality than a varietal name, and if they ask for stringless beans and are assured that they can receive them, and then when they come to use them they find that they have strings, they will not only be disappointed to a considerable extent but discouraged at the idea of direct marketing as being preferable to securing their vegetables in the ordinary way from city market or grocery store. While it will not be possible to cater to all the whims of the would-be consumer, it must be kept in mind that the farmer's family usually takes such quality as is produced without any particular questioning, but when a city consumer orders from a farmer he expects to get produce of a quality which he has in mind, and every endeavor should be made to meet his reasonable requirements so that the business may be established upon a mutually satisfactory working basis. Give a purchaser what he or she wants and is willing to pay for.

Not only will this plan provide an outlet for vegetables (and it is practically as easy to raise vegetables for two families as for one), but it will also establish a contact through which various other farm products may be marketed.

#### GROWING POTATOES.

To guard against disease and inferior quality of potatoes it is necessary to rotate crops.

Grow alfalfa, clover or peas two or three years grain, one year and potatoes one year is a good system.

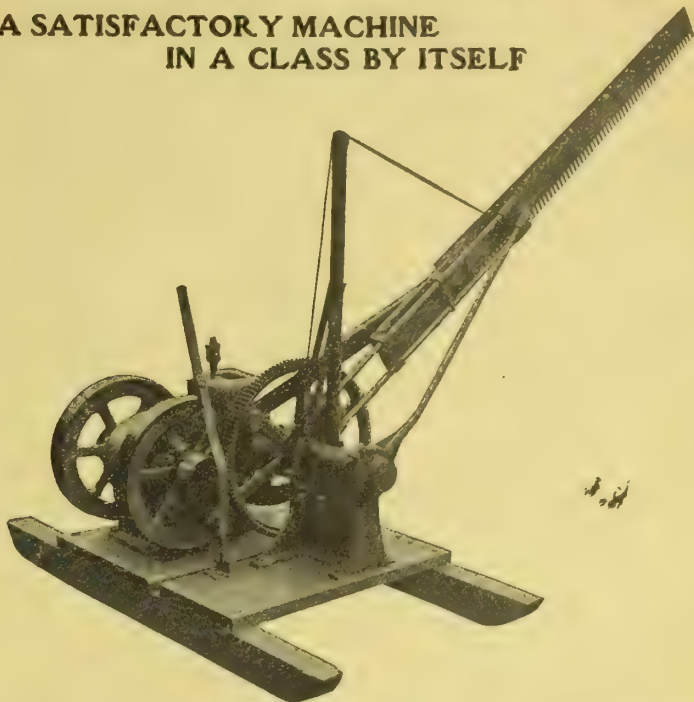
Select good seed. Too much indifference with regard to the quality of seed results in crops of inferior quality and the amount consumed is far less than if a good quality is produced.

#### Cultivation.

E. F. Stephens of Nampa, Idaho, states that successful potato growers there are very careful about the

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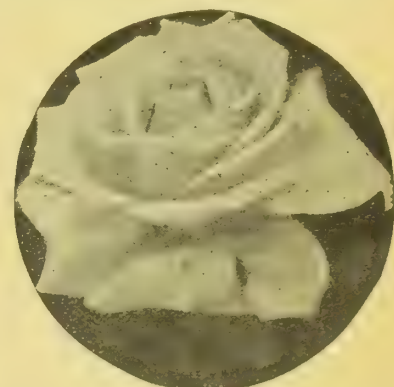
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#### ORNAMENTALS

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preparation of the ground. A fine deep, seed bed is required. The crop is usually planted with a planter. After planting, it should be repeatedly harrowed to maintain a clean, mellow surface, until the tops are above ground, when cultivation follows. If the seed bed has been properly prepared and the ground as it should be, abundantly moist before planting, then the crop would usually be carried until the tubers are set before watering. Water then as needed to maintain a moist condition of the soil. Do not overwater, nor irrigate too late. Cultivate after each irrigation to maintain a loose open surface.

#### Increase of Yield.

Suitable rotation of crop, careful selection of seed from year to year, coupled with suitable cultivation and irrigation, has increased the yield on the farms of the most careful growers from 125 bushels per acre, up to 350 bushels per acre, with occasional yields running far above this.

#### Varieties Best to Yield.

Highest yields have been secured from the composite variety called Idaho Rural, followed by Netted Gem, Early Ohio and Eureka are planted for early.

### ONION CULTURE.

O. M. Morris, Horticulturist, Pullman, Washington.

The onion ranks third in order of importance of the truck crops grown in the United States. It can be grown in any agricultural section of Washington and has the ability to adapt itself to almost any kind of fertile soil. While small the plant grows best in cool weather and will often pass through light frosts without harm. As it grows older and develops it should be exposed to more heat until the warm weather of mid-summer arrives. The gradual change from the frost-free weather of early spring to the warm summer season in the valley sections of the state takes about 80 to 100 days. The mid-summer and late varieties of onions require about that much time for the development of the plant and its maturity before the process of bulb formation is well started. The plant uses from twenty to forty days of the latter part of its season for developing the bulb. The best onions are formed during the warm weather. The supply of moisture in the soil should gradually decrease and the bulbs be permitted to ripen in dry soil with a medium high temperature.

The plants should grow rapidly from the start until full size is attained. Drowth or excessive heat in the spring will cause the bulbs to form and the plants can be stimulated into new growth only with difficulty. The planting must be done in the spring so that the plant will have plenty of time to mature and ripen in the hot, dry weather of the summer. If the crop matures at a time when there is considerable rainfall, it will be impossible to ripen the bulbs and their keeping quality will be poor. Many bulbs will remain green and the neck will be nearly as large as the bulb. Onions of this character are commonly called "neckers," "thick necks," "scullions," and are of little or no market value.

The varieties commonly called

"top onions," "clove onions," "multiplier," and "potato onions," are very hardy and may be left in the ground all winter. They do not develop as large bulbs as the best varieties of seed onions and are much stronger in taste. They are usually grown only for green onions to be sold in the early spring. These varieties grow very early in the spring and may be left in the ground during the summer without any cultivation or attention.

#### Soil.

Fertile soils that are mellow and easily tilled are usually good onion soils. The best soil contains large quantities of humus and readily available plant food. Onions can be grown well on any kind of soil that has the above characteristics. Clay and clay loams are most difficult to cultivate and handle and usually require a little longer period for growth and development of the plant. The character of the soil makes it more difficult to secure a good stand of plants. Sandy loam soils if sufficiently fertile and well supplied with humus are frequently well adapted to onion growing. Onions grown on this kind of soil are usually firm, of the best quality and keep well in storage. Such soils require careful management to conserve the moisture and may frequently require the application of commercial fertilizers. Muck soil if fertile and in a good state of tillage is usually a good onion soil. The sandy loam soil is best for growing the extremely large onions of milk flavor and the muck soils are very popular for production of heavy crops of medium sized bulbs.

#### Varieties.

The varieties that can be most generally recommended for planting in the state of Washington are: Prize-taker, Giant White Rocca, Yellow Danvers, Australian Brown, Red Weathersfield, Yellow Globe, White Globe, and Red Bermuda. There are several other varieties that do well and are well worth planting.

#### ORNAMENTAL PLANTS FROM BELGIUM.

Shipments from Belgium of ornamental plants containing from two or three plants to one thousand plants in each shipment, have been coming into the United States at the rate of about 50 a day, according to the Federal Horticultural Board. While France sends us more nursery stock during the year than all the other European countries combined, during October and November more ornamental plants have come from Belgium than from all the others combined.

The Belgium shipments come via Holland, the territory where they originate being on the Dutch border. The shipments come largely to brokers in New York City, who distribute them to individuals.

France, which sends us much of our imported fruit stock as well as ornamental trees, also continues to ship, the territory where these stocks originate being west of the war zone. The Federal Horticultural Board has cabled the French Government regarding the maintenance of the inspection service and has received through the French Ambassador information that the service is being maintained. Large importers of French stock have since confirmed this advice.

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# 1915 CATALOG

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#### MORE POTASH COMING.

American crops and soils are still as hungry for Potash as before the outbreak of the European War, which curtailed the Potash shipments.

Some of the Fertilizer Companies are trying to induce farmers to buy the one-sided low Potash or no Potash fertilizers of a generation ago. This means a fertilizer that is profitable to the manufacturer, but not the best for the farmer. When the Syndicate in 1910 started the direct sales of Potash to dealers and farmers at reasonable prices, Potash sales increased 65 per cent. in one year, a clear proof that farmers know that Potash Pays. They know that Potash gives good yields, good quality and resistance to plant diseases.

Many of the Fertilizer Manufacturers are willing to meet the farmer's wishes and sell him what he thinks he needs. These manufacturers are now willing to furnish as much Potash as they can secure. They offer goods with 5 per cent. and even in some cases 10 per cent. Potash, if the farmers insist on it.

Shipping conditions are improving, more Potash is coming forward although the costs of production and transportation are higher. The higher price of fertilizers is not due wholly to the slightly higher cost of Potash. Much of the Potash that will be used in next spring's fertilizer had reached America before the war started.

There is no substitute for Potash. We can no more return to the fertilizer of twenty years ago than we can return to the inefficient farm implements or unprofitable livestock of that period.

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ACME REALTY COMPANY  
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"ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

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Successful Salesmen wanted.



# AGRICULTURE

## The Basis of Prosperity

### Fundamental Principles of Co-operation in Agriculture

By Harold Powell, of California.

The co-operative organization differs fundamentally from the capital stock corporation conducted for profit. A capital stock corporation for profit is organized to return an earning and a profit on the capital used in the business. The basis of administration, control and the distribution of earnings is the capital invested in the undertaking. In a co-operative organization, the basis of control is the membership, where each votes equally irrespective of the volume of his business; though the basis of control is often made the product of the members, where each votes in proportion to the volume of business contributed, while the earnings in either case, if they occur, are returned to the member in proportion to the volume of business he transacts through the organization. The basis of the co-operative organization is men; of the capital stock corporation, money. Capital cannot co-operate; products cannot co-operate; only men co-operate. When the degree of co-operation of a member is measured by the capital or the volume of business contributed, then the members as men are not co-operating; either capital or a product is the basis of co-operation through the member as the medium.

#### Forms of Co-operative Associations.

A co-operative association may be incorporated as a capital stock corporation or as a non-profit corporation without stock. If formed as a capital stock corporation it may still be legally co-operative if the laws under which it is formed permit the members to manage its affairs along co-operative lines, or if the statute provides the method of voting, the method of transferring stock, the limitation of membership and the distribution of earnings according to co-operative principles. There has been little effort by the states to enact laws that will permit the organization of purely co-operative associations of farmers. It is therefore impossible in most states for an association to be formed that can operate securely along co-operative principles, though as a matter of fact many associations so formed do, by the consent of the stockholders, actually operate co-operatively.

#### A Stock Corporation Not the Form For a Co-operative Organization.

The stock corporation as defined by the statutes of most states is not the form under which to incorporate a farmers' business organization, though most of the so-called co-operative associations have been incorporated under the stock corporation statutes. The stock corporation laws have been enacted primarily to meet the needs of capital not primarily for the benefit of those who may use the facilities of the corporation. The membership in such organizations is usual stock corporation laws, many of these organizations often pass into

not under legal control, because the right to sell the stock is a legal incident of its ownership. A stockholder may sell his farm and continue to be a stockholder in a stock corporation and still have the right to examine the affairs of the association, or he may sell his stock to some one who is not interested in the organization, or who may even be antagonistic to it; or he may withdraw his membership and still remain a stockholder. There is no legal way by which the stock, and therefore the control of the corporation, can be confined to the membership after the stock has once been issued, unless the association is able to take over the stock and hold it as a trustee, until it can be re-sold to a member. Neither is the voting power of the stockholders under control in a stock corporation, because the voting power is generally proportional to the number of shares held by each stockholder. As a matter of fact most of the so-called co-operative associations of the country have been incorporated as a capital stock corporations in the absence of other statutes under which they could be incorporated and many of them operate by mutual agreement expressed in the articles of incorporation, or in the by-laws, on strictly co-operative principles: others vote in accordance with stock ownership, fix a maximum amount of stock to be owned by any member, and apportion the stock on the bearing acreage of the members, but make no profits on capital. These organizations usually provide that a withdrawing member shall offer his stock to the association before he can sell it outside, a provision that is useless if the association is not able to take it over.

They may provide also that all earnings shall be returned to the members pro-rated on the business transacted by each after interest is paid on the capital invested and other overhead charges are deducted. The stockholders may vote equally by agreement and the capital invested may be paid only a fair rate of interest for its use. The difficulty in such organizations lies in the fact that some of the conditions to which they agree are not, in case of trouble, enforceable in the courts, and the organizations ceases to be co-operative when the stockholders desire for any reason to exercise their legal privileges along non co-operative lines.

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the hands of non-producers or of rival interests, following the withdrawal of members through the sale of farms and the sale and transfer of stock; or a partial control may be held by dissatisfied stockholders who have withdrawn as members. Further Difficulties in the Stock Corporation Form or Organization.

One of the common difficulties in a so-called co-operative association formed as a stock corporation results from the payment of dividends on the paid-in capital above a fair interest for the use of the capital, especially where the capital contributed by the members is not proportional to their individual shipments. The tendency in such organizations is to pay high dividends on the stock. The stockholders generally demand an unusual earning on the capital contributed. They acquire the dividend habit. They deduct an amount from the proceeds from the product of all members, or from the earnings of the company, to pay the dividend, before returning the proceeds to the growers. In some fruit growers' organizations, dividends of 20, 30, or even 50 per cent. have been paid on the capital stock.

The difficulty over the payment of dividends usually arises with a member who is a small stockholder and at the same time a large shipper, or when a stockholder ceases to be an important shipper. A grower becomes dissatisfied when he realizes that the payment of a profit to capital, whether taken from the proceeds of his fruit, or made as an earning on his purchases, are used to enrich a stockholder who has money invested in the corporation but who has not contributed to its success except in the original investment. Another source of trouble in the stock corporation is that the grower becomes dissatisfied after receiving a liberal dividend on his stock, if the business condition of the organization does not warrant its continued payment. In the citrus industry these difficulties have usually been avoided by paying no dividends on the capital, or at least a dividend not in excess of the customary rate of interest.

A farmers' organization that has been organized under the usual stock corporation laws, is on an uncertain foundation, not alone from the lack of control of the membership, but also because of the conflict between the capital and the product of the members whenever the proceeds derived from the latter are reduced to pay an unusual rate of interest on the capital contributed.

There are many so-called co-operative organizations (shrewdly formed) that make an earning for the corporation on the product of the grower by retaining the control of the facilities through which the grower's fruit is handled. The packing houses may be controlled by the organizers and a large dividend paid out of the proceeds of the product on the capital invested. The purchase of supplies may contribute a profit, low grade supplies may be sold at the price of high grade material, and profits may be made in many indirect ways. An organization that pays a profit to capital from the growers' product, either for the use of packing facilities or for any other service, is not co-operative.

It is a stock corporation, operating for the grower for profit on capital, while a co-operative organization is operated by the producers wholly for their own benefit, the benefits being pro rated on the use which the member makes of the organization.

#### A Co-operative Organization Must Spring From Necessity.

A co-operative organization of farmers must be founded on economic necessity if it is to be permanently successful. The reason for its existence must lie in some vital service which it is expected to perform if it is to have strength enough to live in the face of the competition to which it will be instantly subjected. It must compete with existing organizations and this competition will be directed towards eliminating it; it will be viciously attacked; every conceivable form of misrepresentation will be levelled against it; the officers will be attacked by insidious rumors concerning their ability or integrity; the banks, especially in the newer sections, may be controlled by competitors, and may refuse to furnish the necessary credit; and every weapon known to competition, either legitimate or disreputable, will be used to put it out of business.

The average producer is not a business man, nor is he skilled in the arts of competitive business. He is naturally a strong individualist. He is slow to delegate authority over his affairs to any one and when he is face to face with the skillful arguments of those who aim to break the organization and keep him working as an individual, he is likely to weaken and finally leave the organization unless he had felt the effect of hard times, a helplessness arising from a combination of those who buy or sell his products, excessive freight, or commission charges, or other forms of oppression. It is an historical fact that the investment of the farmer must have been threatened by existing conditions before he has been able, in the past, to overcome his individualism sufficiently to work with his neighbors in co-operative work. The country is strewn with the wrecks of co-operative organizations that were born prematurely and which died by the wayside, because the farmer himself deserted in the first real conflict with the established agencies that have handled his business. Co-operation, to be successful, must be founded not only on economic necessity, but it must grow through gradual evolution. It must have a small beginning and grow in strength through experience step by step, rather than by leaps and bounds. The fundamental mistake that is being made in many localities is to form a farmer's organization all at once on the plan of an organization that has taken years to develop. The plan may be sound but a co-operative organization can only succeed when given the unflinching support of the members who through years of experience have acquired an appreciation of the fundamentals that underlie a successful association of this kind. The success of any organization depends on its members, not on its form.

#### The Membership in a Co-operative Organization.

The membership in co-operative organization should be confined ex-

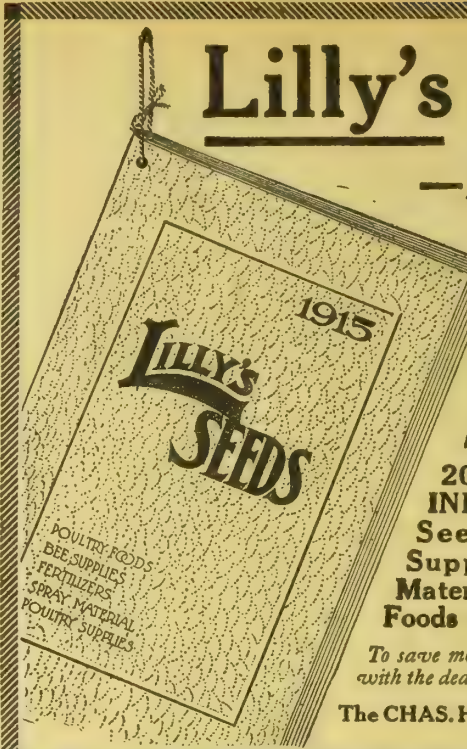
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clusively to those who are producers and who, as producers, use its facilities. The members should be acquainted and have confidence in each other. It should never include those who contribute capital alone to it. Many organizations are formed by bankers, fruit dealers, or others who promote an organization for the purpose of making a profit from it. They may be formed in good faith by business men who realize the value of the co-operative movement and who are willing, as a service, and not a profit, to furnish the capital for its organization. The need for such an organization must spring from within, from the necessity of the industry, and not from a desire of a commission merchant, a broker, or of an ambitious manager who sees an opportunity of capitalizing the co-operative movement for his personal benefit. There are many organizations of the latter type that masquerade under the co-operative banner, but which are formed, managed, and controlled either directly or indirectly by those who make a profit on the packing organizations, on the sale of fruit, on the purchase of supplies, on railroad claims or trade rebates, or in other indirect ways. Such organizations are always kept prominently before the growers as co-operative, a situation which, when it exists, is almost prima facie evidence that the co-operative features are for the benefit of a few, rather than for all the members.

Membership in a co-operative organization should carry with it a responsibility on the part of the member strong enough to carry it through adversity of every kind. To feel this responsibility, the member must of course feel the necessity for the organization; he must feel that he is a part of it; that the organization is his, developed and managed to promote and protect his interests. If the association is formed by the members to meet their economic needs, this feeling of responsibility pervades the membership, but if the association is formed to promote the welfare of the officers or any other class of people, or if financed by well meaning people who really desire its success, an association cannot depend on the loyalty of its members in time of adversity.

One of the problems that a co-operative association always has before it is keeping alive the interest of its members. They must be a vital part of the organization. They must take an active part in its development. They must keep posted on the details of the business; the business methods of the organization must be an open book to them. There can be nothing mysterious about the management of the business. Contracts, salaries, trade or other legitimate rebates, railroad claims, profits, or earnings of every kind—these must be of such a nature that every producer can know about them if a co-operative association is to maintain the loyal support and confidence of its members. It must, of course, win that support by the results it accomplishes and these results must be obtained by a business record that keeps free from suspicion regarding the integrity of its methods, and as free as possible from criticism regarding its business efficiency. Every defect of the organization will be kept before the

members by its competitors, and imaginary defects created by wilful misrepresentation by those who aim to break down the membership, will always be prominently featured.

#### BUILD A SILO.

If you want to save on feed,  
Build a silo.  
It will help in time of need,  
Build a silo.  
Build of concrete if you would,  
Build of brick or build of wood,  
Build of anything that's good,  
But build a silo.

Dairy feeds are soaring high,  
Build a silo.  
Summer seems to be goin' dry,  
Build a silo.  
Cows, too, go dry fed on hay,  
Sort o' seems to fall away,  
They need silage every day,  
So build a silo.

Pasturage costs quite a heap,  
Build a silo.  
Winter feeds are never cheap,  
Build a silo.  
Build it wide and build it deep,  
Cording to the cows you keep,  
And for milk you'll never weep,  
So build a silo.

That's the burden of my song,  
Build a silo.  
If you've cows you can't go wrong,  
Build a silo.  
Milk will flow and smiles'll come,  
With the separator's hum,  
And you'll shout "I'm glad, by gum,  
I built a silo." —Farmers' Guide.

#### COOPERATE.

##### HOW

Join a community breeders' association.  
Belong to a cow testing association.  
Be a booster.  
Encourage the use of bred and tested for production sires.  
Advertise your community and products.  
Urge the production of superior products.

##### WHY

It pays  
Saves money in buying cattle and supplies.  
Acquaints others with your community and business.  
Makes sale of cattle and products easier and more profitable.

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Farmers and Housekeepers week at State College begins February 1st. The regular winter school for farmers began January 4th and lasts 6 weeks. Among special attractions for Farmers week will be the talks given by five of the highest authorities in the United States on their respective subjects. Dr. J. W. T. Duval will speak on Grain Standardization; Chas. E. Bassett, Marketing; O. H. Benson, Boys' and Girls' Club Work; C. B. Smith, Farm Demonstration; D. A. Brodie, Farm Management. These men are from the Bureau of Plant Industry, U. S. Department of Agriculture.

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The importance of keeping live stock and of practicing a rotation of

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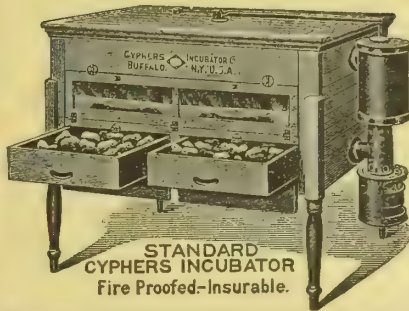


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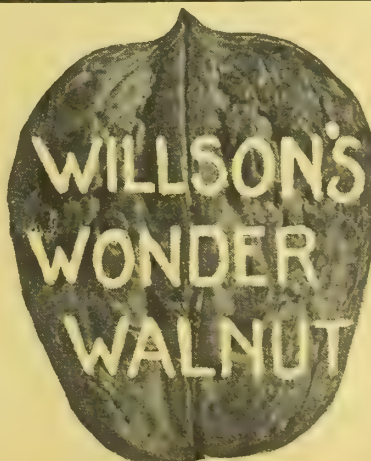
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crops in maintaining the producing capacity of the soil is becoming more apparent each year on the State College farm. Three plots show this fact very strikingly. One plot has been growing wheat continually every year since 1899 without any manure or other fertilizer being applied. The second plot has grown wheat every year since 1899, but has had a light application of manure plowed under each fall. The third plot has had no manure applied and has grown a crop every year but a rotation of wheat one year, oats one year, clover two years and corn one year has been carried on since 1899, the 1914 crop being wheat.

The important lesson to be observed at this time is that the plot that has grown wheat continually without manure promises a very low yield. To the observer, the plot that has been manured and the plot that has not been manured, but has grown a rotation, show an equally good growth of wheat at this time and show a better growth than they did fifteen years before.

The plots show (1) that the fertility of the soil may be maintained either through the use of barnyard manure or by a rotation of crops that includes clover or some equally good soil improving crop; (2) that it is kept in a high state of fertility. It is not necessary to practice summer following with the rainfall received at Pullman, either to give the land a rest or to conserve the moisture of two seasons for the growth of one crop. If the soil is sufficiently fertile, one inch of rainfall may carry more food into the plants than two inches of rainfall may dissolve and carry to the plants from a very poor soil. This is beginning to be very apparent in the field practice on the college farm. Except in small experimental plots, summer fallowing is no longer practiced on the state farm, but a rotation is followed that involves cropping annually with clover, alfalfa and peas grown periodically to improve the soil and corn to serve as a soil cleaning crop (Corn is a soil cleaning crop only when it is properly cultivated—corn itself has no effect in cleaning the soil).

One twelve-acre field lying on a south slope was in summer fallow in 1894. It has grown a crop every year since. Very five years a well cultivated corn crop has helped to keep the soil in good tilth and free from weeds, while peas and clover, interspersed at about like periods, have served to keep up the supply of nitrogen and humus. The field now produces much better than when it was first taken over by the college. In 1911 it yielded forty-seven bushels of wheat per acre. In 1912 it yielded forty bushels of peas per acre. In 1913 it yielded forty-six bushels of wheat per acre. At present there is an excellent crop of oats growing on this field that will produce a very satisfactory yield if the season is fairly normal from now to harvest.

The rich color and rank growth of nearly all crops on the farm are beginning to show the effect of the use of barnyard manure and the growing of peas, alfalfa and clover. One of the fields last purchased has not yet received a treatment of clover or alfalfa and the yellower, more spindling growth of the barley shows a striking contrast to the ranker growth on the other fields.

The importance of maintaining a high state of fertility applies equally well to the semi-arid regions and to the moist regions of western Washington. While it would be impossible to grow a good crop annually with the very limited rainfall of central Washington, it is quite possible for the low rainfall to be much more efficient with plenty of fertility available to dissolve and carry to the plants. The number of crop failures can be very materially reduced and the average yields greatly increased by keeping more live stock, saving and applying the manure carefully and by growing soil improving [leguminous] crops to keep up the fertility. Many sections of Western Washington might grow two crops per year or three crops in two years where they are now scarcely able to grow one good crop, if the soil were kept in a higher state of fertility.

#### WATER TO MAKE CROPS.

##### Wheat Plants and Moisture.

It requires about 40 tons of water to produce a bushel of wheat and the straw on which it grew, while there are about 113 tons of water in one acre-inch. This is pointed out by H. D. Scudder, agronomist of the Oregon Experiment Station, who calls attention to the obvious conclusion that one inch of rainfall over each acre planted to wheat would, if all utilized in crop production, produce three bushels per acre. Since the average annual precipitation over the bulk of Eastern Oregon dry farming land is about 10 inches, the annual wheat yield, with water as the limiting factor, should be 30 bushels. As a matter of fact, the annual yield of this section is but 7 to 8 bushels per acre. As farmers learn that fully three-fourth of the natural moisture is wasted in evaporation, they will more and more join in the movement in favor of farm practices that will save a larger per cent. of water for crop production.

#### BARNYARD MANURE, HANDLING

Recent reports from various experimental farms situated in all parts of the country show the relative values of mineral fertilizers and stable manure. These statistics have been gathered for a period, in some instances, of ten years and more, and show that manure from the stable fed stock is in every way superior to the mineral agent both in immediate plant life-giving qualities and in cumulative values. By this is meant that, if one used on a plot of ground a mineral fertilizer alone one year, and discontinued its use for several years the soil would not bear as well as the soil treated in the same manner, but with manure as a fertilizer. In conducting these experiments manure direct from the stable was used because in this way none of its vitalizing nature has been lost. Farm experts who have studied and analyzed manure, and are qualified to write upon the subject have compiled a table giving the chemical values in this apparently useless farm-by-product. Basing their figures on 2000 pounds of fresh material they have found 9.92 pounds of nitrogen valued at \$1.50, 4.74 lbs., of phosphorus; \$.33 and 9.50 pounds of potassium valued at \$.57, or a total value of \$2.40. Of this amount fully 46% was held in the water naturally found in the

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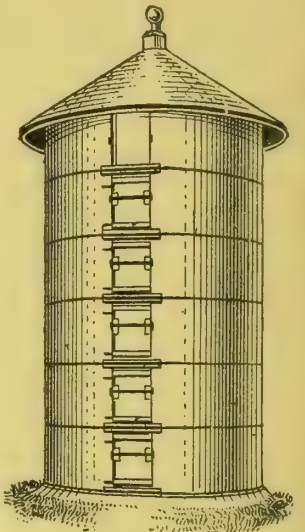
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## SEEDS

of only adaptable varieties and high germinating quality can planters afford to use. Our corn germinates over 96 per cent. Kale and other field, also garden, seeds are the kinds which give satisfaction. As early application as possible will serve our mutual interests best, for farmers cannot afford to take chances in crop production and in some lines supply is limited.

**Poole's Seed & Implement Co.**

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TACOMA, WASH.



manure. It will thus be seen that to get the best results manure should be spread on the field as soon as possible after it has been taken from the stable. Some of the best modern farms are equipped with a conveyor which carries the material from the stable to a platform where a mechanical manure spreader of the latest model is constantly kept. A laborer is sent with it to the field when most convenient. This method saves double labor and a large part of the value of the fertilizer. The mechanical spreader is so arranged that it works the material into small particles before it is thrown over the field at the desired thickness. This is impossible in the old hand method of manure spreading where sometimes the plant is suffocated by receiving too much material. In the last few years implement manufacturers have devoted their time to making what is called a lowdown manure spreader which is more practical and efficient than the old variety. There are three styles of these lowdown spreaders now made. One is the old style high spreader with wheels of smaller diameter. Another has large wheels with a long wheel base and the body swung between the axles like a hammock. The third has the wheels built under the body but with plenty of traction power on account of special treatment of the wheel housing. The latter seems to be the most popular with the farmer because of its simplicity, durability and ease of operation. Large wheels are to be desired for the power they must impart to the working mechanism is derived from that source. Thousands of the latter are now in use by progressive farmers everywhere.

#### DIVERSIFICATION AS SAFEGUARD.

##### High Quality to be Maintained.

In some parts of the country certain crops are selling this year for very low prices. This is not an unusual condition of affairs, because the price of these same crops fluctuates widely from year to year. Even in the same year certain districts receive high returns while others show losses.

A study of the older agricultural districts in the Eastern States reveals how the organization of the farm guards against severe losses at such times. In Chester County, Pa., for instance, we find that dairying is the chief enterprise, supplemented by such cash crops as potatoes, hay, and wheat. Some additional income is deprived from the sale of cattle, poultry, eggs, and hogs. With such a farm organization the price of such crops as potatoes or hay might be unusually low, yet affect the farm profits for the year comparatively little.

If we study another district, such as central New York, we find that hay, potatoes, cabbage, beans and fruit, with some livestock, are the important sources of income. This year potatoes, fruit, and early cabbage are all low in price. Yet these farmers through excellent diversification are practically insured against any large losses.

It is in this respect that settlers in the newer agricultural areas of our Western and Southwestern States have yet to learn a very important

lesson. When agricultural districts are developed so rapidly that economic forces do not have time to properly act, the result is oftentimes a very imperfect scheme of farm organization. It is caused by the extreme profitableness of certain crops for a few years and the consequent development of farms on the basis of a single enterprise. Coupled with this one-sided organization, land prices are often forced so high that an intensive form of agriculture is necessary when only a fairly extensive type of farming should prevail. It is these single-crop farmers who are greatest sufferers in years of low prices for their products. Aside from better use of labor and land, diversification of enterprises is one of the surest safeguards against losses. Specialties in farming are all right, but a farmer usually needs more than one of them.

E. H. THOMSON.

#### CEMENT TILES.

I noticed Neighbor Bayes' reply to my former article on cement tiles; and some time ago I received the following letter from Oregon:

Mr. W. H. Kaufman, Bellingham, Wash.  
Dear Sir:

The writer noticed your article in the July issue of the Northwest Horticulturist in regard to Cement Drain tile and being the first time I have ever known Cement Drain Tile to fail I am writing to you to find out what kind of a machine you were using and if the cement used was fresh.

We are in the Cement Drain Tile business after making a failure of the Clay business and of course want to learn all we can about cement.

It hardly stands to reason if Cement Tile PROPERLY made will fall from the effects of acid as some of the largest sewers in the world are of cement construction, and nearly every sort of acid passes through sewer pipe.

The failure of your neighbors tile was evidently the cause of poor manufacture, curing a cement tile is like clay, it must be exactly right or a failure is sure to follow.

The testing laboratory of this state claims that cement tile are just as good as clay.

We would be pleased to know the results of your experiment of the seven different kinds of tile you have laid.

Any further information you can give us will be appreciated very much. Yours truly,

HAULENBECK BROS.

Of course it must be understood that up to the present time this whole matter is under investigation. It will take many years to determine all the points of interest.

Theories must be formulated and then tested. Some facts have been determined and others will be established from time to time.

The main thing, just now, is caution.

Being greatly interested in the question of drainage I give the following which is a mixture of fact and theory, hoping that it will be of use to many readers of the Horticulturist.

##### Acids Dissolve Cement.

Take a piece of cement and pour on it muriatic acid, such as is used in soldering galvanized iron.

The cement will foam up precisely as soda will foam up when acid is poured on it, being dissolved. The sand will soon fall into a heap.

Vinegar will accomplish the same result, only more slowly.

Acid water will act quite as surely, but more slowly still.

**GREAT SPECIAL OFFER!**  
Use a Litchfield Manure Spreader  
One Year Before You Pay a Cent!!

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**The King of Low-Down Spreaders** **Made in Three Sizes**

Never was such an offer made before! It is proof of our confidence in the Litchfield. Earn the price of a Litchfield Spreader many times over by increased crops, before you advance one cent. We'll distribute 1000 spreaders on this basis.

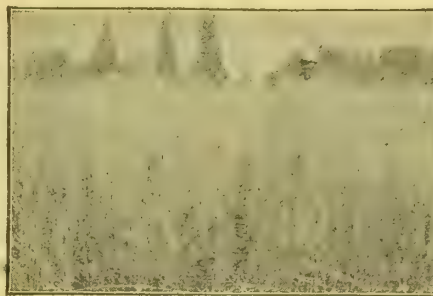
## Write Today for Particulars!

Look at the pictures below! It shows what YOU can do by spreading the manure now going to waste on your farm. WRITE TODAY—AT ONCE—FOR PARTICULARS ON THIS EXTRAORDINARY OFFER.

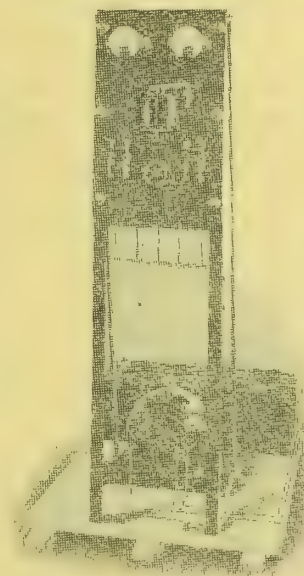
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occupies entire block  
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A LITCHFIELD CROP NO LITCHFIELD—NO CROP  
Actual photograph taken on farm of P. B. Marshall, Albany, Oregon, showing two fields—one where a Litchfield Manure Spreader was used, and one without.



## ELECTRIC LIGHTING

Nothing complicated. Simple in operation. Low cost of maintenance. There are many reasons why you should have electric lighting conveniences on your farm which are best explained in our pamphlets sent free of cost on application. Will be glad to have you give us information about the size of your buildings, distance apart and your facilities, if any, for generating power. Don't hesitate to ask questions.

WRITE FOR ILLUSTRATED CATALOGUE AND PRICES.

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This should make any farmer cautious about putting cement tile in any soil which will turn litmus paper red.

#### How Long Will Cement Tiling Last in Acid Ground.

Neighbor Bayes says he has had cement tile last a year or more in good shape, even in peat (acid) soil.

Doubtless!

The ordinary, one-four cement tile is porous.

Think what this means!

Each grain of sand touches another grain of sand at one point, with the thinnest possible coating of cement holding the two grains together.

A one-four tile is just like a popcorn ball! Parts touch each other only at points—a very slight coating holding them together—holes all around!

The cement coating in a one-four tile may be one-onehundredth of an inch. Certainly it is exceedingly thin. Water (acid water) passing through this one-four tile dissolves it in say three months.

Now instead of this one-hundredth of an inch in the one-four tile; Neighbor Bayes makes a solid (one-three) tile five-eighths of an inch in thickness.

Of course it will last longer! Equally, of course, it will in time, go to pieces.

If water of a certain degree of acidity will dissolve one-onehundredth of an inch in three months, then it will dissolve 1-25 of an inch in a year, or 5/8 in 15 years; the probable life of Neighbor Bayes one-three tile!

Of course these figures are merely approximate; for only the department of chemistry at the State University can say just how thick the

coating of cement is around the sand grains in a one-four cement tile.

Heavy machinery for packing the cement can do no more than make it solid; can neither change nor prevent the chemical action whereby the acidity of the water decomposes the alkaline cement.

#### The Haulenbeck Letter.

I have seen the cement packing around sewer pipe dissolved in less than a year and doubt any cement sewer being able to carry acids without being decomposed.

Judging from what I have seen, cement tile, when made one to three will last several years; say eight to twenty according to degree of acidity of soil.

The cement tiles will be eaten away first at the joints where the water passes between the tiles to enter the drain.

Concerning the general proposition that cement tiles will go to pieces in an acid soil there can be no doubt at all. The time they will last is as yet a mere guess. Draining may so sweeten the soils as to prevent decomposition of tile after the first few years—maybe not.

Four inch clay tile should cost not to exceed \$15 at kiln.

So long as manufacturers hold the price at \$20 and cement tiles at \$18 to \$20 at factory near farm, many will use cement, saving the \$6 or more freight per 1,000 feet.

My only word at present is "caution." Good methods of manufacture will help, but nothing can prevent the ultimate dissolution of a soluble alkaline cement in an acid solution.

W. H. KAUFMAN,  
Bellingham.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### PROPER IRRIGATION CODE NECESSARY.

Speaking for the Washington Water Code Commission, the Hon. Ira P. Englehart of North Yakima urges the passage of the proposed document as recommended. In an address before the Irrigation Institute in part he said:—

We have tried to make this code provide that if a riparian owner did not put his water to a beneficial use in time he must lose it. We have limited the time in which these people must declare their rights. In a way we have declared that beneficial use is the basis of these rights.

Old settlers seem to think that if they settled on a stream 20 or 30 years ago and the stream runs across a corner of their land they should have a perpetual right to use that water whenever they get ready. In other words, they can say, "This country will develop when we get good and ready." I have a letter from a gentleman who is going to be in the next legislature, who stated to me: "I am going to insist that an amendment be made in this code to the effect that anybody who has lands on a stream can simply file a statement that at some future time he intends to use that water, and upon filing that statement, he or his heirs or suc-

That means they can use it when they get good and ready, and I want to say to you of that amendment is put in there, you better kill this code, because I would rather see this entire water code killed than have it passed with that amendment.

With that amendment the law of our state will be worse than it is today. Any time that an amendment is put into that code to the effect that all a man who owns land along a stream has to do is to file a statement that at some future time he or his successors intend to use the water of that stream on this land, and then can use it when he gets good and ready, I want to tell you that no man in the state of Washington can take a bucket of water out of any stream in this state because it would be all claimed by riparian owners. If that kind of an amendment is put into this code take the code out and bury it because we don't want it.

They have similar codes to the one we have proposed down in Oregon, Utah, Wyoming and a good many of the western states. We are one of the western states where you can't tell what a man's water right is by going to the records, but with this code in operation we can.

Most men when they sell their land and explain the water right, say, we have got a water right in the

## One Man With A Kirstin Stump Puller

ASK THE MAN THAT OWNS A KIRSTIN—THIS IS WHAT THEY SAY:

**PULLED 100 STUMPS A DAY**  
"I pulled 500 stumps in five days. Pulled a 4-year-old 24-inch poplar stump in five minutes."—OLE L. NOSS, Big Falls, Mont.

**PULLED BIG STUMPS WITH DEEP ROOTS**  
"I have pulled out trees, 18 inches in diameter, of green fir in a deep soil, where the roots nearly go down to China, breaking off some roots a foot in diameter."—PHONSO BEAL, Parkdale, Ore.

**IT'S THE BEST AND COSTS LESS**  
"There is another stump puller on the Island called the — Stump Puller, but it costs six times as much as the Kirstin, and the Kirstin pulls just as much with one-sixth the amount of money invested."—OSCAR PETERSON, Oak Harbor, Wash.

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## Canada is Calling You to her Rich Wheat Lands

She extends to Americans a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta.

This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help to feed the world by tilling some of her soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think what you can make with wheat around \$1 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming is fully as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or to

**J. N. Grieve, Cor. 1st and Post  
Streets, Spokane Wash..**

Canadian Government Agent.

## LIME YOUR SOIL

The same work, the same investment in time and money on limed soil will double your crops and the best form of lime to use is

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Selah and Moxee canal or some other canal. You ask, what has the Selah and Moxee canal people got, and they say, well, there are lots of complications and we really can't tell. We have had very little litigation in this valley over those things, but as the country settles up and grows older and as these water rights become more valuable, the temptation to hog a little more water will be very great.

Another thing, the government has come into this valley and established an elaborate system of canals and reservoirs and is going to build more and when they are completed there will be another great big system or two or three that will have water rights on the river and whether they are prior to this water right or that water right we will not know. We had an illustration of that a short time ago in the Wenas. If we had had a code long ago we could have had the water rights in the Wenas settled and now, after about 15 years of litigation up there and six or eight decrees, it appears that we will now commence a suit, that is, some of the water users up there are about to commence a suit that will involve the entire Wenas valley in litigation for five or 10 years over their water rights, and when they are through they will have settled very little, just the right and claims in that valley, but what priority they have as to other streams will be still open. The question of storage water will come up on account of the government being in here and all these matters will be important to every farmer in this valley. We should have some method of establishing these water rights, putting them on record, so that when a man has a water right it is of record at the county courthouse or at Olympia.

#### EXPERIMENT STATION FOR IRRIGATORS.

President E. A. Bryan of the State College urged the irrigation representatives present at the Yakima institute to harmonize their differences as to location for a station for irrigation experiments. In part he said:

"Take the geography and with your finger follow the valley of the Columbia, the Spokane, the Okanogan, the Methow, Lake Chelan, the Entiat, the Wenatchee, the Yakima and its tributaries, the Palouse, the Snake, the Tucannon, the Touchet, the Walla Walla and other stream systems. They are so widely scattered that the people in each valley think it the central of all irrigation and look with suspicion and distrust upon those of every other. And yet the principles and practices of each are fundamentally identical with those of every other. Why should they be so jealous of each other? Why should they say that the truth discovered in one is of no use in the other?

'You need now, you have needed a great deal of fundamental experimentation. You need now and you have needed an experiment station devoted to irrigation problems. Are you now broadminded and liberal minded enough to recognize the common need of all these scattered regions? Are you to the point where selfish local interests and the desire to have state money spent in your community and your land boomed can give place to a willingness to have such an institution located sole-

ly from the point of view of its solution of irrigation problems?

"Can you see how far the solution of irrigation problems transcends in importance local profit?

"If you have not advanced to this point then you are not ready for an experiment station. Unless at the outset you pass a self-denying ordinance you need not to begin. If you see the need, if you eliminate selfishness, if you bury the kicker, then you should proceed to act in harmony and with irresistible force.

"You must know that you must ask for and receive the necessary funds. The college can not do so. If the money is gotten you must get it. We are the creature of the state and the servant of the state. It is your duty to provide the money and impose on us the duty of doing the work. There can be no separation of this from all other agricultural experimentation the more so because of the close cooperation of the U. S. department of agriculture and the state experiment station. Any multiplication of agencies serves but to distraction of effort, added cost, and lessening efficiency. Concentration and cooperation should be the watchword. We stand ready to expand this work as facilities are provided and as the results appear to extend the gospel by the extension propaganda already provided for. The work of experimentation and extension is distinctly different from and supplementary to the regulatory work of the state. The latter is of the highest importance and should be based upon the former and these should all work together.

#### CROPS ON TIETON PROJECT.

The crop census for 1914 just completed on the Tieton unit of the Yakima Project, Washington, is an interesting document and indicates substantial progress on the part of the settlers during the past year. According to the U. S. Reclamation Service.

Out of the total irrigable area of 22,700 acres, 20,600 acres were irrigated and 15,920 actually cropped. The unproductive land consisted largely of young non-bearing orchards and fall seeding. The most important crop, as to acreage, was alfalfa, which was grown on 5,370 acres producing a total of 18,850 tons or  $3\frac{1}{2}$  tons per acre valued at \$113,100 or \$21 per acre. Potatoes were the most valuable crop as the total returns from 3380 acres harvested a crop yield of 400,400 bushels or 120 bushels per acre was reported. The crop was valued at \$120,120 or \$36 per acre. The unit price was only 30c per bushel. Hops showed the highest average return per acre. The acreage in the crop was 286 yielding 397,400 lbs. valued at \$35,750 or \$125 per acre.

Among the other staple crops of the project were the following with average returns per acre: alfalfa seed, \$120; small fruit, \$100; apples, \$88; garden, \$50; beans, \$45; peaches, \$36; clover seed, \$30; onions, \$29; pears, \$27; barley, \$25; Indian corn, \$22; wheat, \$21; clover hay, \$16.50. The average returns are generally lower than those of a year ago owing to lower prices for fruit, hops, hay and potatoes. For the total acreage cropped, the average price per acre was \$29.60 and the total value of all crops was \$472,480.

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Going to build next spring? Buy the lumber now. H-L-F prices are lower than ever right now—lower than they'll be in spring. You will save by ordering now, and time is plentiful for hauling. Now's the best time of all the year to order lumber.

**Send material list NOW**

for winter price that will amaze you by its lowness. It's the price of the producer to you, direct. No middlemen's profits to pay. You'll be delighted with the quality of H-L-F lumber. It's clean and straight—the finest kind of material. Quality, grades, count, no extras and complete satisfaction guaranteed.

**Free roofing to cover**

If you haven't shed room, you'll find enough roofing with your H-L-F lumber to perfectly protect it until spring. Send your material list today and ask on the coupon for anything you wish.

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Capital \$1,000,000  
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Send List and this Coupon**

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Gentlemen—Please send me the following:

(Please Write Plainly)  
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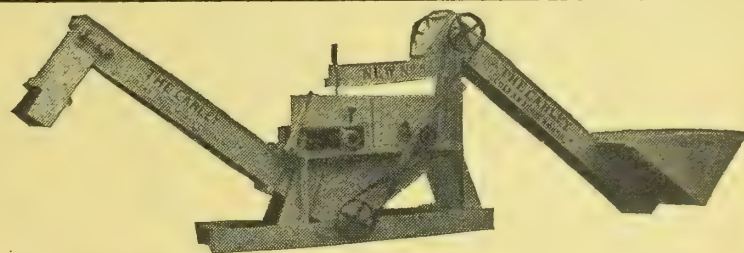
- ☐ H-L-F House Pricer (free). ☐ Freight-paid price H-L-F Silo. Diameter.....ft.  
☐ Delivered, freight-paid price of enclosed list of materials (no charge for quotation).  
☐ Prize Plan Book (send 10 cents). ☐ Barn Builder's Guide (send 4 cents).  
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Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 cords in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

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## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WILKINSON

## THE WELL-SPENT LIFE.

A well spent life is like a fragrant flower.  
 It's perfume cheers the weary passers-by,  
 Blooming more sweetly after every shower  
 To beautify the earth and glad the eye;  
 Fading at last, but in it's dying hour  
 Sowing it's seed of charity and love,  
 Which in it's turn takes root and leaf  
 and flower  
 A living incense to the God above.

A well-spent life is like a glorious song,  
 Uplifting all who come within its spell.  
 Perfect in time and tune, full, rich  
 and strong,  
 Having both tremulo and grand  
 deep swell.  
 It's joys and triumphs are the clear,  
 high tones—  
 The medium range—the daily life  
 at best—  
 It's doubts and fears are mirrors and  
 it moans  
 The preparation for the final rest.

—Anna R. Snow.

(This poem well portrays the life  
 of our friend Mrs. Mary A. Udell,  
 who passed away at Burton on Nov-  
 ember 3rd.—Ed.)

## DISRESPECT FOR AUTHORITY.

There is no tendency in this country today which portends greater menace to American institutions than the growing disrespect for authority, the lower grades of the Grammar Schools to the classrooms of the university, the boy or girl chafes under authority, says a writer in the San Jose "Mercury." Teachers and principals are openly blamed for imposing discipline as though they had no right to do it, and not infrequently a chit of a boy or girl defies the teacher in the presence of an entire class. And instead of the others disapproving the guilty one waxes in popularity. Radical newspapers attack the courts as though the men on the bench were a set of ignoramus without authority or responsibility. These press reflections are picked up by cheap demagogues on the rostrum and flourished with abandon almost startling in its brazenness. Thus is the security of life and property loosened if not menaced, for if our courts are not respected how can their judgments have weight?

"Parents no longer control the goings and comings of their children, and as a result old-fashioned parental respect is almost a lost virtue. No other abuse contributes so largely to the increase of business in our Juvenile Courts. Little girls and boys rush off alone and unchaperoned to class parties and entertainments, remaining until late in the night and starting home either alone or in the company perhaps of a strange escort. Superiors in positions of trust are treated with familiarity by those under them, destroying all semblance of authority in the conduct of business institutions. All

along the line the tendency to disrespect authority is rampant.

"We repeat that the remedy for this dangerous state of things lies chiefly in the home, and secondarily in the schoolroom. The boy who respects his parents will respect his teacher, and respecting his teacher he will respect all others in high place. Inculcate in him an appreciation of his own place in the world and an understanding of his relations to those older than himself, and you will have gone far towards making him a good citizen."

## KINDNESS IN DAILY LIFE.

Do not keep your sublime love and tenderness sealed up until your friends are dead. Fill their lives with sweetness; speak approving, cheering words while their ears can hear them, and while their hearts can be thrilled and be made happier by them. The kind things you mean to say when they are gone, say before they go. The flowers you mean for their coffins, send to brighten and sweeten their homes before they leave them. If my friends have alabaster boxes laid away full of fragrant perfumes of sympathy and affection which they intend to break over my dead body, I would rather they would bring them out in my weary and troubled hours and open them that I may be refreshed and cheered by them while I need them. I would rather have a plain coffin without flowers; a funeral without a eulogy, than life without sweetness of love and sympathy. Let us learn to anoint our friend beforehand for burial. Post mortem kindness does not cheer the burdened spirit; flowers on a coffin cast no fragrance backwards over the weary way.

—Charles W. Baker.

## GAMEES AT PARTIES.

The following contest may be arranged on cards, and guessed during the luncheon:

1. What the farmer does to his sheep—shears.
2. To pick one's way—thread.
3. What is thrown away—waist.
4. A sign of servitude—yoke.
5. A berry—thimble.
6. A blow—cuff.
7. A company of musicians—band.
8. Deep sea animal and part of his body—whalebone.
9. An exclamation—a-hem!
10. A kind of music—piping.
11. Necessary to hang a picture, and part of the human body—hook and eye.
12. A piece of furniture and a weight—cotton.
13. Money and a derogatory adjective—cashmere.
14. A grassy yard—lawn.
15. Preposition and a fisherman's term—overcast.
16. What the cook does to the turkey—baste.
17. A part of an eatable animal—

## For the Sick Room



When warmth is urgent, the

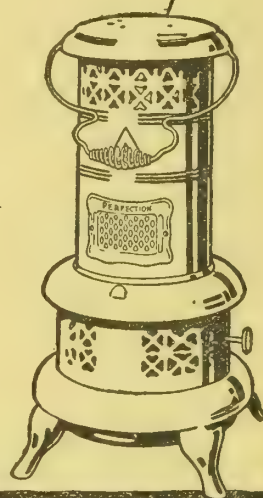
## PERFECTION OIL HEATER

gives it, instantly and cheaply. Easily carried from room to room. Needs but little attention. Always ready. For best results use Pearl Oil.

Dealers everywhere

Write for booklet, "Warmth in Cold Corners."

Standard Oil Company  
 (CALIFORNIA)  
 Seattle



## M. C. TEBBETTS Incorporated

Buy your supplies right and you won't need to pay the other fellow's debts. Send for price list.

## GROCERIES — FURNITURE

3% freight allowance if you mention this paper.

"A little better than the store you thought was best."

M. C. TEBBETTS, INC.

1201-3 A Street  
 Tacoma, Wash.

## NORTHWEST GROCERY CO.

HEADQUARTERS  
 FOR HOTEL AND  
 CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

Northwest Grocery Co.

13th and Commerce Sts.,  
 Tacoma, Wash.

Oldest and Largest Mail Order  
 House in the State.



For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

MASHELL PAINT CO.  
 TACOMA, WASH.

## New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE

10 Days FREE—Send No Money

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 14 leading Universities show that it

## Burns 50 Hours on One Gallon

common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

## \$1,000.00 Reward

will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin? GET ONE FREE. We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one free.

MANTLE LAMP COMPANY. 93 Aladdin Building, Portland, Ore.  
 Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World



TWICE THE LIGHT  
 ON HALF THE OIL

## MEN WITH RIGS

MAKE \$100 TO \$300

Per Month Delivering

the ALADDIN on our

easy plan. No previous

experience necessary.

Practically every farm

home and small town

home will buy after

trying. One farmer who

had never sold anything

in his life before writes:

"I sold 61 lamps the first  
 seven days." Another  
 says: "I disposed of 34  
 lamps out of 31 calls."  
 Thousands are coming  
 money endorse the Alad-  
 din just as strongly.

No Money Required  
 We furnish capital to re-  
 liable men to get started.  
 Ask for our distributor's  
 plan, and learn how to  
 make big money in unoc-  
 cupied territory.



mutton leg.

18. Part of a door—panels.
19. A negative—knot.
20. A prejudice—bias.

Tie a small pencil to each card, using narrow white tape for the purpose, and present the work-basket centerpiece to the person making the largest number of correct guesses.

#### KITCHEN RECIPES

**Nut Cake**—Cream together one cup of butter and two cups of granulated sugar, add one-third cup of sweet milk, two cups flour sifted with two tsp. baking powder, one-half cup grated chocolate or cocoa, one cup of mashed potatoes, one cup of nut meats, four eggs well beaten, one tsp. vanilla extract, one-half tsp. cinnamon, one-fourth tsp. salt. Mix ingredients together well and bake in loaf or layers. Ice with boiled icing.

**After Dinner Mints** — One cup of granulated sugar just moistened with boiling water, boil five minutes; take from the fire and add cream tartar the size of a pea; mix well and add 4 or 5 drops of oil of peppermint. Beat briskly until mixture whitens, then drop quickly on waxed paper.

—A. B. R.

**Filled Cookies** — One-half cup of melted lard, 1 cup of sugar, 1 teaspoonful cream of tartar, ½ teaspoonful of soda, ¾ cup of sweet milk, flour to make dough which will roll out thin. Cut with biscuit cutter. Place in the center of each cookie a spoonful of the filling; put another cookie on top, press together well and bake.

**Filling**—One cup of raisins, ½ cup sugar, 2 tablespoons flour, ½ cup boiling water. Mix well together, and when thoroughly blended, boil for 2 minutes.—A. B. R.

If there is not electricity in the house and it becomes necessary to have a little light all night in a sick-room, use a candle heaped with salt to the black part of the wick. The light will be mild and steady, and it will not contaminate the air like kerosene or gas.

#### COURAGE.

I like the man who faces what he must,  
With step triumphant and with heart of cheer;  
Who fights the daily battle without fear;  
Sees his hopes fall, yet keeps unfaltering trust  
That God is good; that somehow, true and just,  
His plans work out for mortals; not a tear  
Is shed when fortune, which the world holds dear,  
Falls from his grasp—better with love a crust,  
Than living in dishonor; envies not  
Nor loses faith in man; but does his best,  
Nor ever murmurs at his humbler lot,  
But, with a smile and words of hope, gives zest  
To every toiler. He alone is great  
Who, by life heroic conquers fate.

—Sarah K. Bolton.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

## Building Up the Dairy Industry

By H. C. Davis, Granger, Wash.

Following a pleasant introduction in his annual address before the Washington State Dairymen's Association, Mr. Davis said:

"The people of Chehalis and the surrounding country are to be congratulated on their natural resources. The lumber industry, of course, came first and with it the Chehalis of long ago. When the sawmill was done with your surrounding country and moved on to more congested fields (of standing timber), nearly a half million acres of which your county still has, then came the real pioneer with his little family and a wealth of hope and determination to make of this his home, and it needs no one to tell you that, while the lumberman moved on and those who followed the camps were through and there was nothing left but a waste, these men with their families and a wealth of all that goes to make life really worth have cleared your land and with the help of the cow your country now has a wealth of homes and a wealth of production far greater than was at first the hope of the most hopeful. Your assessment rolls show 10,439 cows in the county; I wonder

if all these are the same as the highly-advertised 'contented' cow. Your assessment rolls also show 5800 improved acres and nine times that many unimproved, and this is not counting the half million acres of timber yet to cut. I repeat: You are to be congratulated and we visiting members of this association are to congratulate ourselves that we are at this time enjoying the hospitality of the people of this place.

"While I believe that the people of Chehalis and surrounding country as regards the dairy industry are enjoying an enviable position, it is for the benefit of those not so fortunately situated that we are here, if possible, to devise ways and means to help create new interest and better conditions in all the State of Washington. It is, indeed, encouraging to see men from all parts of the state, here to exchange ideas and help formulate plans for the betterment of all the dairymen of all the state of Washington. We have with us men representing the federal department of our industry, and to all these I wish to bid a hearty welcome and will ask that they give freely of their fund of information wherein it will



### Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

**The Puget Sound Flouring Mills Co., Tacoma, Wash.**



**\$3000 FOR YOU**

That's the money you should get this year. I mean it. I want County Sales Managers quick, men or women who believe in the square deal, who will go into partnership with me. To experience needed. My following bath tub has taken the country by storm. Solves the bathing problem. No plumbing, no water works required. Full length bath in any room. Folds in small roll, hardy as an umbrella. I tell you it's great! GREAT! Rivals \$100 bath room. Now listen! I want YOU to handle your county. I'll furnish demonstrating tub on liberal plan. I'm positive—absolutely certain—you can get bigger money in a week with me than you ever made in a month before. **I KNOW IT!**

**Two Sales a Day—  
\$300.00 a Month**

**Exclusive Territory.  
100% Profit.**

That's what you should get—every month. Needed in every home, badly wanted, eagerly bought. Modern bathing facilities for all the people. Take the orders right an' left. Quick sales, immense profits. Look at these men—Smith, Ohio, got 18 orders first week; Meyers, Wis., \$250 profit first month; Newton, California, \$60 in three days. You should do as well. **2 SALES A DAY MEANS \$300 A MONTH.** The work is very easy, pleasant, permanent, fascinating. It means a business of your own.

Little capital needed. I grant credit—help you out—back you up—don't doubt—don't hesitate—don't hold back—You cannot lose. My other men are building houses, bank accounts, so can you. Act then quick, **SEND NO MONEY.** Just name on penny post card for free tub offer. **Hustle!**

**H. S. Robinson, Pres., 2648 Factories Bldg., TOLEDO, OHIO**  
Canadian Branch — Walkerville, Ont.

**Demonstrating Tub Furnished**

## A. S. Johnson & Co.



114 C Street Tacoma, Wash.

## Rhododendrons

Native Shrubs, Plants and Flowers, collected from the forest.  
Send for Circular.  
**JOEL SHOMAKER**  
Nellita, Washington

## Sunshine Lamp 300 Candle Power FREE

**To Try In Your Own Home**  
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.  
**COSTS 1 CENT A NIGHT**  
We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.  
**SUNSHINE SAFETY LAMP CO.**  
914 Factory Bldg., Kansas City, Mo.

## GOOD SEEDS

**BEST IN THE WORLD**  
Prices Below All Others  
I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.  
**Big Catalog FREE**  
Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.  
**R. H. SHUMWAY, Rockford, Illinois**



in our own effort to improve our own methods. While we have the three different climatic conditions in our state to meet, there are a few great fundamental principles applicable to us all and as necessary to the success of the one as the other.

"In looking back over the year now drawing to a close I have to say that it has not been a good year for the

in any manner benefit the man who for 365 days each year milks the cow. I place the man who milks the cow first for the very good reason that on his shoulders rests the burden of making the business a success. It is true we must have the retail milk man, the butter maker, the cheese maker, the creamery man, the condenser, and I will go further and say that as yet, in our unorganized condition, we must have our commission men. We should, however, see to it that all these serve the dairy industry, or the man behind the cow, and not, as it now sometimes seems, have the men behind the cow, or the dairy industry, serve these, even if they are a necessary part of us.

#### Broad Optimistic View.

"Right here I may as well as at another time say that I am an optimist and have great faith in the well-meaning of all our co-parties in the dairy industry, if only we can each understand the other. I suggest the co-operative spirit be allowed to manifest itself at this particular time to the end that we may all profit thereby. I believe the information gained at the meetings during this session will do us all good, particularly the dairymen of the west side of the state. It seems unfortunate from one point of view that we have on Puget Sound one climatic condition to meet and just east of the Cascades in the irrigated belt another climatic condition, and in eastern Washington still another. I call attention to this that the dairymen from the central or irrigated section and eastern or dry-farming section may not feel that we have not their interests in mind if at this meeting held on the west side we largely discuss west side conditions. Instead, I will ask those here to remember there are a few basic principles that apply in all sections. If when rations for maximum economic production are being discussed, and the one man is forced to feed high-priced grains while you may be getting the same results at a much less cost with other feeds, remember to tell us of it that we may have the benefit of your experience



dairyman. The prices for our product have ranged somewhat low, with no perceptible decrease in cost of production—neither in the price of feed where purchased nor in the cost of necessary labor. There must be some cause for these conditions. It may be and no doubt is due in a measure to the financial and business depression through which the entire world has the last year been passing. The cause of this world-wide business depression is of course too large a question for this body at this time to discuss. We as producers have, of course, suffered loss; but not to as great an extent as many of our other industries. If time and space would at this time permit, I am sure comparative statistics would convince us that we are at this time the most prosperous class of people in our state. However, to be engaged in the most prosperous business in our state does not necessarily mean that we are to sit still and leave to the people engaged in other lines the burden of helping to remove all the present causes of the general business depression.

#### Tariff and Dairy Products.

"Far be it from me to inject into the deliberations of this meeting at this time anything of a political nature, and I trust we will all forget we ever were partisans and remember the best politics is the best citizenship. I ask this for the reason that there seems no doubt that the reduction of the tariff on butter has resulted in great loss to the dairymen of the United States in general and particularly the dairymen of the Pacific Northwest. We Americans, being naturally of a speculative turn of mind, some of us at once saw fortunes in the importation of New Zealand butter and proceeded to buy it by the ship load and sell it in competition with our own product, with the result, as near as I can see, of demoralizing the market, and not only causing loss to the dairymen of this country but an actual loss to the speculator as well. We have, however, no reason to believe there is not another lot of the same kind who will continue to menace us with the foreign product.

"Feeling as I do and being the elected head of the dairymen of the State of Washington and expected at this time to give the best thought and work that is in me for the welfare of the men and women engaged in all lines of the industry in the State of Washington, I am forced to say that I recommend that this association go on record as opposed to that part of the tariff law relating to reduction on dairy products until such time as the producers of foreign dairy products are required by law to produce them under the same restrictions, regulations, and cost for labor as are required of the producers of this state.

#### Cost of Production, Co-operation.

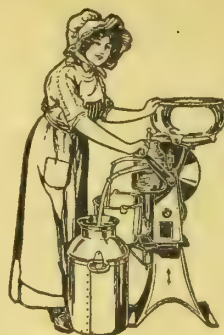
"The outlook from now on seems good and that prices will range higher, and, while this is true, the prices of all grains have raised to an almost prohibitive figure. This no doubt is due to the European war. How to remedy existing conditions is now the vital question confronting us dairymen. First of all, we must lessen the cost of production. It can be done by the use of cheaper feeds, such as ensilage and in some cases root crops, and I feel there is not to-

day in the State of Washington one silo where twenty, thirty, fifty and perhaps one hundred might be used profitably. I am an ardent advocate of the silo for the storing and preserving of feed for all kinds of livestock.

"Then, we must co-operate; not in one thing, but in all things. We must not only co-operate as regards creameries but as regards filling these 100 more silos just spoken of. Of course, not every man, who could have a silo, could have a silo and all necessary machinery to fill it. The question of co-operation is such a large one that I will just give you my idea of it in general and leave it to each individual community to work out details. The true co-operative society is an association of individuals rather than a combination of capital. It may issue stock and one man may own a considerable number of shares but when the profits of a society are divided only a specified rate of interest should be paid on that stock; a part of the remaining surplus should be carried to a reserve fund, that the organization may have financial stability and good credit, and the remainder then divided, but not among stockholders as such; it should rather to the members, or even non-members, in proportion to the business they have done with the society. A part might go to the employees in proportion to their wages. Furthermore, it seems important that the business meetings of the society should be governed by the rule one man one vote; that is, the voting body as a company of co-operators instead of representatives of capital. Another very important principle of the co-operative society should not attempt too many things. The moment the need of simplicity is forgotten, confusion creeps in, dissension is invited, and your organization breaks down. When the organization is simple, it is far easier to obtain the volunteer services of competent officers. What I mean is a number of small co-operative societies rather than one large society.

#### Quality and Profit Margin.

"After having gotten from our herds the maximum production at a minimum cost, then it still remains for us to cause our product to bring higher prices. This can be done to a certain extent by producing a better article. This can only be done when applied to butter by the grading of cream. I trust the time is not far distant when we as producers will co-operate with the creameryman and butter maker to the end that this will be done. Do not misunderstand me here and think that I want a single more inspector, for it now seems to me that the place-hunter has had his innings and it is high time we, by co-operative methods, caused a lot of the present place-holders to try with all its glory the production of some of the dairy products under his own prescribed rules. We have among us men who are a real service to us as inspectors, but they act in the capacity of instructors rather than inspectors. This brings us to an important office the inspector should fill, but seldom does, and that is while he is about the state inspecting the dairymen and instructing the dairymen how to make their milk cost them on their farms 20 to 25 cents per gallon, he should at the same time help to instruct the public



## Don't delay buying a DE LAVAL Cream Separator a single day longer

IF YOU ARE SELLING CREAM or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

THERE CAN ONLY BE TWO real reasons for putting off buying a De Laval; either you do not really appreciate how great your loss in dollars and cents actually is or else you do not believe the De Laval Cream Separator will make the savings claimed for it.

IN EITHER CASE THERE IS one sensible answer: "Let the De Laval agent set up a machine for you on your place

and SEE FOR YOURSELF what the De Laval will do."

YOU HAVE NOTHING TO risk, and over a million other cow owners who have made this test have found they had much to gain.

YOU CAN'T AFFORD TO wait till spring. Let the De Laval start saving cream for you RIGHT NOW.

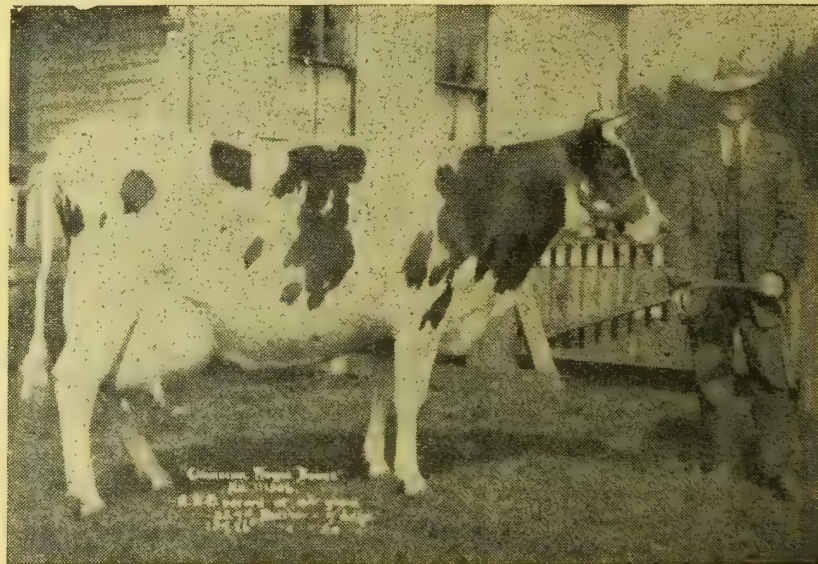
WHY NOT START 1915 right with a De Laval and by spring it will have saved enough to go a long way toward paying for itself. Why not talk this over with the local De Laval agent? If you don't know him write to our nearest office.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE



## PUGET SOUND HERD

Holstein-Friesian Cattle — Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years, 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

Seventy-five A. R. O. cows in herd. All bulls for sale are from official tested dams.

Wm. Bishod, Chimacum, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.



that they should not expect and require good milk delivered at their door at less than cost. I do not believe that milk as prescribed by the laws of the State of Washington can be produced in the state and delivered to the consumer in a nice glass bottle for less than ten cents per quart and each man who handles it up to that time be allowed what he ought to have for his labor and capital invested. Looking at the other side, neither can be consumer buy the same amount of real food in the shape of most anything else for the same cost. I say the dairy instructors should help to make these facts public instead of continually telling in what wealth the dairyman is rolling.

#### Preparing For Future Operations.

"As predicted by our president a year ago, we have suffered from the enactment of foolish and drastic legislation and more is to follow, unless we act on his then suggestions and effectively organize and fight to prevent it. Just here I wish to repeat that I am an optimist of the first grade and can see little but good ahead, and would advise that we talk and think more of the good things we have rather than to complain. I believe we will effectively organize and co-operate to the end of most things I have suggested.

"We have recently had in this country an outbreak of the foot-and-mouth disease almost simultaneously in a considerable number of places. Our state and federal authorities are to be congratulated for so quickly getting the disease under control which for a time threatened the livestock industry of the entire country. The single outbreak in our state was quickly disposed of, greatly to the credit of the owner of the cattle as well as to our governor, who gave it his personal attention.

"At present I must say that while we would have things better, and no doubt we will, the outlook from the dairyman's viewpoint is flattering. It would seem that the European countries will need all our surplus for many years to come (not only of the dressed meats and dairy products, but of our breeding animals as well) to restock their depleted and altogether-wiped-out herds. I can not refrain from saying that a good deal of the money to replace that breeding stock, is seems to me, will come to the State of Washington, for within the borders of our state we have world's record cows of three of the recognized dairy breeds, namely, Jersey, Ayrshire, and Holstein. I further predict that in a very short time we will lift the dairy industry to the ranking industry of the state of Washington. Let us then congratulate ourselves that we are engaged in the foremost business in the best state in the best country in the world."

#### DAIRY PRODUCTS AND ENSILAGE.

That the dairymen are paying more attention to feeding of ensilage is evidenced by the large number of silos built during 1914 and the interest taken at our Dairymen's Meetings just being held.

The entire Northwest is adapted to dairying owing to the climatic conditions, as well as the fertility of our soil, and all silage crops can be raised especially well on either our logged off or arid land. There is no

better or cheaper feed than ensilage and the crop to raise is the one that will produce the greatest amount of green feed per acre, and corn is especially valuable in this respect.

While talking to Geo. W. Hayton of Mt. Vernon, about value of silage he said he had just opened his Ideal Green Feed Silo and the corn ensilage was in fine condition due largely to the length of time he let it grow before cutting. He said he felt confident a great many dairymen could get better feeding value and a greater tonnage if they let corn stand longer and not cut too early. Any silage cut too soon sets up a fermentation that is injurious to the animal to which it is fed and causes indigestion.

#### Silage Aids Digestion.

In the production of milk or meat only that portion of the daily food which the animal eats in excess of the daily needs of the body can be used. It has been determined by a number of experiments that hay, straw, corn stover and similar feeds contain such large amounts of indigestible matter that the energy used in the work of digestion may be as much as is contained in the feed. When the apparent digestibility of foods is the same, a succulent food is digested with less energy than dry feed and therefore the net available energy for meat and milk production is greater.

#### Reduces Cost of Production.

Too much praise can hardly be given silage as a basis for the ration of dairy stock. It is the standby for feeding cows. It increases the flow of milk 10 or 25 per cent. It induces the flow of saliva and gastric juices, thereby aiding digestion, making cows more contented, calves more plump and sleek coated.

Thru the courtesy of the De Laval Dairy Supply Co., I got the following figures that might prove helpful:

A comparison of silage and grain in the cost of milk production was made by the Ohio Experiment Station with the following result:

The silage used in this test was a mixture of one ton of soy beans and cow peas to two and one-half tons of silage corn. The figures used in estimating the cost of the different rations are as follows:

|                |                 |
|----------------|-----------------|
| Silage .....   | \$ .10 per cwt. |
| Hay .....      | .30 per cwt.    |
| Stover .....   | .20 per cwt.    |
| Cornmeal ..... | 1.00 per cwt.   |
| Oil meal ..... | 1.20 per cwt.   |

The cost of feed per hundred-weight of milk was, 68.7 cents with the silage ration and \$1.05 with the grain ration.

The cost of feed per pound of butter fat was 13.1 cents with the silage ration and 22.1 cents with the grain ration.

The facts reported indicate that silage can be made to take the place of a large portion of the grain ration. By growing more of the protein feed such as alfalfa, soy beans, cow peas, vetches, etc., and placing them in the silo with corn, the grain ration may be almost or completely eliminated.

J. V. SHEPARD.

#### OPERATING PLAN OF A COW TESTING ASSOCIATION.

A group of dairy farmers, usually not over 26 in number, get together, elect officers and organize for the purpose of improving their herds by



## Holsteins Fresh Cows and Registered Bulls

A large practical milking herd from which to select.

Our young fresh cows are being sold to old customers who are constantly enlarging their herds, and we are supplying a number to beginners, who buy individuals or in bunch lots. Every cow is sold on its merits as a producer, and we have some fine milk and butter record cattle. The young stock is in excellent condition and prospective buyers seem to appreciate the opportunity we offer in heifers and cows.

We also have some fine two-year-old, pure-bred bulls with high records back on both sides to offer at reasonable prices. Having a large herd of practical dairy cattle on hand we can supply almost any want in the dairy cattle line, as corroborated by our many satisfied patrons.

Write or make appointment for further particulars.

### VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

## Registered HOLSTEIN and High Grade CATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

### H. S. ROYCE

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

## REGISTERED HOLSTEIN SIRE

All experienced dairymen who are realizing some measure of profit are agreed that no dairy farmer can afford to use any but a sire whose parentage shows known records of production. Don't make the mistake of using a grade sire. The registered sire has a fixed value according to his ancestral records. We can supply a splendid bull, a grandson of Karel Bos. His sisters give 40 to 54 lbs. milk with test of 4%. He is guaranteed to please and will give satisfaction. Price on application.

## BURNAMWOOD FARM

J. C. BURNAM, Proprietor

SNOHOMISH WASH.

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.



means of weighing and testing the milk from each cow, keeping feed and production records in a systematic way and working co-operatively to improve the dairy interests of their locality.

They employ a tester, recommended by an agricultural college, whose duty is to visit each herd one day a month. He usually arrives in the afternoon, weighs the hay and grain fed that night or estimates the value of the pasture or feed used, weighs the milk from each cow night and morning and tests it for butter fat. All records are carefully kept and profits or loss on each cow every month thus arrived at, so that by the end of the year or possibly sooner, the records will show whether a cow is profitable or not, whether she should be kept as a producer and breeder or sold to the butcher.

The cost of operating such associations usually is from \$1. to \$1.50 per cow annually, with a minimum charge of \$10 a herd where the herd is small. This money is paid to the treasurer of the association in semi-annual or quarterly installments in advance, and is used to pay the tester's salary and any incidental expenses. Each member also agrees to furnish board and lodging for the tester one day a month and to convey him to his next place of work. The tester also has his board and lodging over Sunday at the place where he works Saturday.

From 350 to 450 cows are necessary to profitably carry on such an association, and each member pays his share of the cost as determined by the number of cows set opposite his name when he signs the agreement.

A. J. LASHBROOK,  
Dairy Field Agent, U. S. Dept. of  
Agriculture and Washington  
State College.

### MY EXPERIENCE AS A DAIRYMAN.

Address by John W. McCutcheon at  
the State Dairyman's Association,  
Chehalis, Wash., December  
16, 1914.

Instead of boasting of my success, I will rather tell you of the mistakes I have made during the time I have been milking cows and trying to improve my dairy herd. Ten years ago I commenced dairying on my farm near Adna. There were about 10 acres of the farm cleared, with considerable rough pasture. Today, I have all of it in cultivation that is worth clearing. I began dairying with 7 or 8 scrub cows. This was my first mistake. I should have borrowed the money and bought registered Jersey cows. In order to increase my herd I picked up a dozen scrub calves from among my neighbors, and raised them as best I could with insufficient milk and little or no grain. This was my second grand mistake. Most of them made very poor cows from lack of breeding and lack of feeding. For the first 5 or 6 years I kept selling off the poorest of my herd, some as dairy cows, giving myself a bad name for producing scrubs; others to the butchers at low prices. I realize now that I have lost much money by making these two mistakes—starting with a poor foundation and trying to raise calves on insufficient milk and insufficient grain ration.

Gentlemen, it was not through lack of knowledge I made these mistakes; to my shame, it was through lack of enterprise. For expediency's sake I started too cheap and sold too much grain.

I was fortunate enough 9 years ago in securing 3 pure bred Jersey calves from good cows. I have kept all their heifer calves. I have always kept a registered Jersey bull, and now my herd is improved, bringing better returns, and I am selling 8 or 10 cows every year, as I never destroy a heifer calf. The cows I am selling now are improving my reputation for owning good stock, but I am still losing money by not having all registered stock.

I no longer make the mistake of stunting a calf. I feed skim milk and grain till the calf is about 12 months old. I have found that the cow is made in the calf. I have found good breeding is essential, but good feeding more essential.

It may be true that I could make as much money by selling more grain and feeding less; but in a short time both farm and herd would suffer. Then there is a mighty satisfaction in seeing your stock looking fat and vigorous, besides the improvement from the manure. For the last 3 or 4 years my grain crop has increased beyond my expectations on account of the manures from the cows.

"Cast thy bread upon the Water; for thou shalt find it after many days." This proverb is very true, as applied to the feeding of young dairy stock. We cannot make something out of nothing, one must invest liberally to get good results in the raising of good dairy cows. A buyer often asks me how much milk one of my cows gives. My answer generally is "that depends upon how much and the kind of feed she gets." I have found that a little extra feed brings a profit; just to keep the cow milking, no profit—possibly a loss. We must give before we can expect a return is as true of dairy cows as it is of land. If we go on year after year raising grain upon the same land the return becomes less and less.

I have been very fortunate as regards the health of my herd, having lost only one cow in 10 years, and that from milk fever. I have always separated the milk. Mr. Smith of the Chehalis Ice Co., takes all the cream during the summer months for ice cream, and during the winter months I have no difficulty in getting a couple of cents above the market price because I ship in larger quantity and fresher than I could were I operating on a smaller scale.

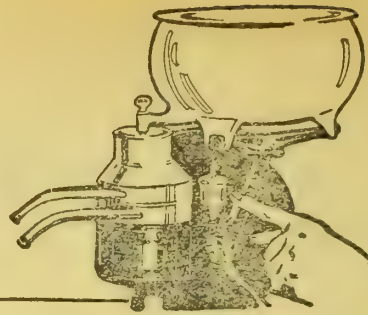
In conclusion, fellow dairymen, we have the satisfaction that we are conserving and increasing rather than diminishing the heritage of the generations that are to follow on. We are leaving the land better than we found it.

### THE FEEDING AND CARE OF DAIRY COWS.

(Prepared in the Dairy Division of the  
Bureau of Animal Industry.)

#### Feeding Cows During Pregnancy.

The feeding of the dairy calf should begin before it is born. Too many dairymen practice very scant feeding of pregnant dry cows, and as a



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The best cream separators often fall below expectation simply because they are not properly lubricated. The separator is your most delicate farm machine. It demands an oil especially made to suit it.

## Standard Hand Separator Oil

is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close fitting bearings. It protects them from wear. It enables your separator to deliver *all* the butter fat. It eliminates unnecessary repairs and lengthens the life of your machine. There is no better oil made for your separator. Ask your dealer for it.

Standard Oil Company  
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## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

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Kent, Wash.

## A. J. C. C. JERSEYS

### Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

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## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices. J. W. Cilse, Owner

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## Brady Farm Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.



result, weak, puny calves are dropped which from birth are handicapped in their development and are difficult to feed and care for. It is false economy for any dairyman to withhold feed from a cow under such circumstances, as this is likely to affect unfavorably the future welfare of the calf as well as later milk production by the cow. While the demands upon the cow at this time are perhaps not quite so great as when in full milk production, there is nevertheless a severe strain upon her and she should be fed liberally so as to be able to produce a strong, well-developed calf and so that she may be in good condition to give a large flow of milk.

#### Teaching the Calf to Drink.

In nature the calf sucks the cow until it can support itself. In modern dairy farming, however, the value of butterfat and whole milk forces the dairyman to separate the calf from the cow soon after birth. The milk produced by the cow for the first few days (colostrum) has properties which put the calf's digestive system in good working order. It is therefore necessary that the newly-born calf have this milk. It is a good practice to let the calf suck the cow for about 48 hours after birth, but if weak and poorly developed it may be well to let it suck for several days to gain strength.

The longer a calf remains with the cow the harder it is to teach it to drink, but it is usually a simple matter to teach a good robust calf to drink if taken when not more than 2 days old. Before this is attempted the calf should be kept from the cow about 12 hours; it will then be very hungry. About 2 quarts of its mother's milk, fresh and warm, should be put into a clean pail and held in front of the calf, which will sometimes put its nose into the pail and drink without coaxing. In most cases, however, it will be necessary to let the calf suck the fingers and by this means gradually draw its nose into the milk. The fingers should be removed carefully as soon as the calf gets a taste of the milk. It will oftentimes take its nose out of the milk in a few seconds, and if so the operation will have to be repeated. Patience is necessary. Usually after the second or third feeding the calf will drink alone. Occasionally a calf is stubborn and its nose has to be forced into the pail; in such cases it should be straddled and backed into a corner. The nose is then grasped with one hand, two fingers being placed in the mouth and the nose forced into the milk, when the calf, by sucking the fingers, will draw the milk up into its mouth. The fingers should be gradually removed and this operation repeated until the calf will drink alone.

#### Time of Feeding, Quantity of Milk.

When a calf is young it is best to feed it three times a day, as nearly eight hours apart as possible; but many successful feeders feed only twice a day. The calf must be fed regularly and in equal quantities. It is impossible to give a rule which will apply to all cases, for some calves have greater appetites than others, grow faster, and therefore should have more milk. The working capacity of the stomach of the calf is small, and during the first few weeks more troubles are caused by feeding too much milk than by feeding too little. As a rough guide

to the inexperienced feeder the following is suggested:

First week. Feed a 60-pound calf 4 quarts a day of its mother's milk, warm from the cow.

Second week. If no digestive troubles appear and the calf is thrifty, increase the feed to 5 or 6 quarts of whole milk a day. This does not need to be its mother's milk.

Third week. Feed as for second week, except that 1 quart of skim milk is substituted for 1 quart of the whole milk.

Fourth week. Same as third week except that one-half of the milk should be skim milk and one-half whole milk.

When the calf is 1 month old it may receive all skim milk provided it is thrifty. The amounts can be increased gradually until it is 3 months of age when it should be taking 8 to 10 quarts a day.

The foregoing rule for feeding applies only to a calf weighing about 60 pounds at birth. It may be varied according to weight and the vigor of the calf. Experience will soon teach the feeder how to vary the amounts. Larger calves will need a little more milk. When skim milk is used instead of whole milk some feeders attempt to feed more of it, because they think that the extra amount given will compensate for the loss of the fat. This is entirely wrong. No more skim milk should be fed than if whole milk were used, but the fat removed from the milk should be replaced by grain, as is pointed out in another paragraph.

#### Heating Milk for Calves.

While the calves are young the milk should be heated to blood heat (90° to 100° F.). When 2 or 3 month of age calves will do well on cold milk, provided it is of the same temperature, or practically so, at each feeding. The important thing is that the milk be of the same temperature at each feeding. Dirty or old milk should not be given.

#### Grain to Feed With Milk.

A little grain should be fed as skim-milk feeding begins, in order to replace the butter fat removed in the cream. Two parts, by weight, of cracked corn and one of wheat bran make a good grain mixture which every farmer can readily secure and requires no special preparation. The calf should be taught to eat this grain by sprinkling a little of it in the feed box right after feeding the milk. No more grain should be fed than the calf will clean up readily.

#### Roughage and Pasturage.

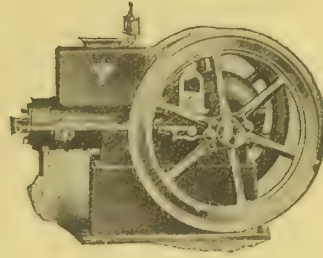
The calf should be supplied with plenty of roughage, preferably clover, alfalfa, or pea-vine hay; but if these are not available, mixed hay, bright corn fodder, or shucks may be used. This roughage should be kept before the calves in a rack or a box where it can be kept clean and fresh by renewing it each day. The calf, when it is a week old, will begin to pick at this, and at one month of age will be taking a considerable amount. As in feeding grain, cleanliness is of great importance.

The calf will do well on pasture, and if this can be provided convenient to the buildings he will be able to get the greatest part of his roughage in this way.

#### Cleanliness Necessary for Calves.

Cleanliness is one of the most important factors in feeding young calves. Clean feeding pails, troughs,

## ALPHA COMBINATION POWER SPRAY OUTFIT



Equipped with a Duplex Vertical Cylinder, Double Acting Pump, direct connected to a 2-H. P. self-contained ALPHA ENGINE, on an all-steel frame and platform ready to be mounted on wagon trucks.

A THOROUGHLY DEPENDABLE OUTFIT

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1016 Western Avenue.

**San Francisco**

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There is a larger demand than ever for our young registered Holsteins, evidently due to the fact that quite a number of our old customers have realized handsome profits from buying them. Young heifers and bulls raised here from calf are acclimated when ready for service. Having their breeding records and the animals in sight, a judge of dairy stock can size up pretty closely their value as producers in a dairy herd. We have some splendid youngsters to suit those who want either the registered, pure bred or high grades. And we have two registered bulls of serviceable age that could hardly fail to pay any owner of high grade Holsteins less than 200 per cent. on their cost, in the increased value of product from a future herd.

Those having registered herds and in need of a sire will do well to write us for breeding records as we can show some of the best family records in Holstein production and save money to those who otherwise would buy and express from the East.

While butter fat is coming down is a good time to make ready for buying, for there will soon be a rising market. We will be glad to have those who wish to buy on time confer with us.

Write today for our descriptive and complete printed list of Holsteins and Guernseys.

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**SUMNER, WASH.**

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

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Some choice young registered Jerseys for sale, both sexes. Large producers of milk. Test 5.5 to 6.5%. Herd headed by Eminent. Write for prices.

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Strongly bred from highly testing ancestors. Write for Particulars

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VASHON, WASH.

S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.



and stalls are safeguards against digestive troubles. Milk should be fed only in clean pails, which should be washed and scalded after each feeding. All feed boxes should be kept clean. Special care should be taken to prevent meal from fermenting in the corners of boxes. Fermented or moldy feed will often upset the digestive system of a calf and endanger its life. No more grain should be fed than will be cleaned up in a few minutes. The bedding in calf stalls becomes wet very quickly. The calf should by all means be kept dry, and it is therefore necessary to keep the stalls well bedded at all times.

#### Scours in Calves.

The principal difficulty in raising calves is scours. This trouble is usually due to mistakes in feeding—dirty milk, dirty pails, sour milk, fermented grain, irregular feeding, over-feeding; almost any mistake in feeding is liable to bring about this trouble. The first thing to be done in such cases is to reduce the feed about one-half and see that it is fresh and clean in every respect. Oftentimes this will be all that is necessary, and then the calf can be gradually brought back to full feed. If the trouble is serious and persistent, give the calf 2 to 4 tablespoons of castor oil in milk as a physic, and two or three times daily a mixture of one part solol and two parts subnitrate of bismuth in doses of 1 to 2 teaspoonfuls, depending upon the severity of the case and the size of the calf. If scours is general and persistent, it will be well also to disinfect the calf stalls with compound solution of cresol, or some other good disinfectant. (See Farmers' Bulletin 480, "Practical Methods of Disinfecting Stables," which may be obtained from the Department of Agriculture, Washington, D. C.)

If calves begin to scour in one or two days after birth and the discharge is white, acute contagious scouring is probably the trouble and will require the most thorough disinfection and the prompt services of a competent veterinarian.

#### GUERNSEYS AS LEADERS.

##### Dairy Items of Interest.

By S. M. Shipley, Haller Bldg, Seattle, Wash.

The Guernsey advance register work shows some interesting facts bearing upon the development of producing capability of dairy breeds under improved methods. While we are quoting Guernsey figures, the same result has also been achieved in each of the other distinctly dairy breeds.

Twenty years ago the highest Guernsey milk record was 12000 pounds. In 1913 Guernsey advance register records disclose the following advancement along the line of milk production, to-wit: May Rilma over 19000 lbs., Dolly Dimple, two 12 month records each over 18000 lbs., Spotswood Daisy Pearl over 17,000 lbs., fourteen others exceeding 15,000 lbs., and a general average of 3000 records of about 9000 lbs.

Dolly Dimple in her highest four months produced 7800 lbs., Spotswood Daisy Pearl, 6700 lbs.; and the worlds champion May Rilma, in her best four months produced 7065 lbs., and now comes a new candidate at present under official test, with a four

months' production, lacking fourteen days, of over 8300 lbs. The above figures show where the Guernsey milk record is going under proper conditions, and improved methods.

Guernsey advance register records show that the breeders are putting a large per centage of their heifers under official test during first lactation period, which necessarily reduces the general average of production. Notwithstanding such fact the last fifty cows competing A. R. records prove some interesting facts as to Guernsey capabilities. Thirty-six of the fifty produced an average of over 505 lbs. butter fat, four of this number averaged 622 lbs., while two of them produced 713 lbs. each. The above are not picked records but were made principally by young cows and show a fair average of Guernsey capability.

While above milk records show the Guernsey in a creditable light, her butter fat production gives her a still stronger position as a candidate for dairy honors. Compare the general average production of all dairy cows in the United States, which is about 160 lbs. of butter or less than 150 lbs. of butter fat, with the record of the Guernseys. Secretary Caldwell of the Guernsey Club, in making this comparison says: "We have one record of over 1000 lbs., five records of over 900 lbs., fourteen over 800, fiftythree over 700, one hundred seventy nine over 600, six hundred and eleven over 700, while the average of 2994 A. R. cows is 426 lbs. butter fat, or 274 lbs. in their favor, and what is it? It is enough to equal a ten per cent investment on a Guernsey bull for a dairyman if he had to pay you breeders \$825 for the bull."

An illustration of the manner in which the Guernsey dairy cow has responded in development under improved methods and wise management is observed in the history of the great cow, Yeksa Sunbeam, which was the first dairy cow of any breed to produce 1000 lbs. of butter. After making her great record her name and record continued to hold a place among the thirty-five best Guernsey records until she was forced gradually from the topmost place down through the lower grades till she has within the last year, been entirely displaced, owing to the greater achievements by Guernseys that have been developed and brought to greater perfection since her time, and she no longer ranks among the leaders of the breed.

The little Island, which is the native home of the Guernseys contains only about twenty-four square miles. The land is occupied only in small holdings and intensive cultivation is the rule. There are about 6000 cattle on the island with but few large herds, practically no pasturage, the animals being either confined or tethered. For 125 years no new blood has been infused but the foundation stock of strong constitutional vigor and dairy type has been maintained and improved upon by judicious inbreeding with one principal aim in view, namely, production of rich, yellow, high testing milk. Quality has been the chief desire and object. Occupying but few acres the small farmer keeping from four to ten cows was compelled to retain the best only, with land of a rental value of \$50 to \$100

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Don't order seeds before you get our beautiful, useful, descriptive Catalogue. It gives you facts of everything that is best to plant for your locality. Remember we have sold the best seeds that can possibly be had for over twenty years, and we have hundreds of letters like the following:

Aabling Ebright Seed Co.

Your seeds are the best I ever had. Seems that every seed grows till my garden is full of fine vegetables. I have transplanted to every space I have in my garden.

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Pride of the North Corn.

Your seed did fine. I had the largest tonnage per acre of any 14 in this valley and am safe to say in King County I filled a silo 14 x 30 from a piece not over two acres.

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Your orders will be taken care of by men that have spent practically all their life in the Seed Business, and they will be taken care of right. There are many things in our catalogue you should know. Send for a copy today.

**AABLING & EBRIGHT SEED CO.**  
89 Pike Street  
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## DAIRY EQUIPMENT AT A BARGAIN

One Blizzard ensilage cutter nearly new, a bottle washing plant, complete, and a bottling machine, slightly used all at half price. Further particulars on request.

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## HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. W. Hollinshead, LADNERS, B. C.



## REGISTERED HOLSTEINS

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Young cows and heifers and a young bull, all out of A. R. O. dams and high record sires. Write for prices and further record.

**J. H. De Hoogh & Sons**  
Twin Brook Stock Farm  
LYNDEN, WASH.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.

## Registered Jerseys

BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

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Registered bulls and cows for sale. Good producers. Write for records and prices.

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## "B. K. M. BERKSHIRES"

Two good boars for sale; fit for service; yearlings. Also weaned pigs, both sexes.

**WOODLAND FARM**  
Lacey, Thurston Co., Washington



per acre, good management and good cows were a necessity and the Guernsey cow under those conditions has made the rugged island a place of fertility and of comfortable homes.

What she has done there she can and will duplicate here if properly handled.

The achievement of the Guernsey cow in the State of Wisconsin further evidences her capability, even under rigorous climatic conditions which prevail in that state. Within a period of about twenty years since the Wisconsin dairyman commenced to adopt the Guernsey cow, the breed has increased in numbers therein until at the present time Wisconsin possesses more registered Guernsey cattle than does the Island of Guernsey. At the last State Fair over 100 representatives of the breed were shown exceeding any other breed in number exhibited.

A western Washington cattle dealer of prominence recently returned from Wisconsin with a shipment of Holstien grades was asked "Why did you not bring out some Guernsey grades," replied "I could not get the class of Guernsey grade which my customers require without paying \$25 to \$50 per head more than the price for which I secured the Holsteins." He further stated that he made a special effort to secure Guernsey grades but that the owners did not want to let them go. Query: If the Guernsey grade is of so much value to the dairyman of the eastern and middle western states, is it not a fact that she would be of equal service and profit in the northwest?

#### COOL CREAM THOROUGHLY FOR GOOD BUTTER MAKING.

One of the most common causes of poor-quality butter is the lack of immediate, thorough cooling of the cream after separation. The Dairy Division of the U. S. Department of Agriculture has made a careful investigation of conditions on a large number of dairy farms, and the data obtained show that, if properly cooled, cream of the best grade can be produced with but little extra labor or expense. The principles involved are very simple and are easily understood.

A liberal use of ice which has been stored in winter to be used the following summer, is one of the requirements for the solution of the poor-butter problem. Farmers who are already successfully delivering good products to the creamery have usually provided for themselves a convenient source of supply for the ice, suitable houses for storing ice, and ice-water tanks for the immediate cooling of the milk or cream.

#### THE REMOTE COUNTRY DAIRYMAN.

From an Address Before the Washington Dairyman's Association, by T. R. Siler, Vance, Wash.

You men who have good transportation at your very doors, are much more independent than is the isolated dairyman. The various markets for dairy products, such as the condenser, the retail milk trade, ice cream trade, sweet cream trade, cheese factory, etc., are all at your disposal and you can take your choice if you find that one line does not suit you and can change to another, or if the price is better in another line

than your own, you can change. This is not true of the dairyman off the railroad and who has poor transportation. He is absolutely compelled to sell his products to a creamery, the product usually in a sour condition, and very often in the summer time in a rotten condition. Being committed to this one line of endeavor has a tendency to throw the isolated dairyman into a rut, and ruts above almost anything else, are inimical to the success of a dairyman.

One reason for this is that each dairy cow has a distinctive temperament, a herd of twenty or thirty cows having about that many temperaments, and the herdsman that follows a groove is very apt to override the finer sensibilities of most of his cows, with the result that his cream check at the end of the month is short.

#### Efforts to be More Centralized.

Our community is largely devoted to dairying, and is situated twenty to twenty-five miles from the nearest railroad point. We ship our cream to the Tacoma and Seattle creameries. Now right here is one of our hard propositions to deal with. The cream is going to too many destinations. The various creamery patrons, instead of going together and shipping to the creamery, are divided into cliques and ship to different creameries. This divides the total amount up so that each collector has to wait five or six and I believe one of them, seven days, before he gets a full load. The hauling distance is so great that he cannot afford to make the trip without a full load. It takes a day to collect, another day to reach the railroad, and still another day to reach the creamery. So you see a part of our cream is from eight to ten days old before it reaches the place at which it is to be made into butter. Now cream that is old cannot possibly be in good condition, will not make first-class butter, and the manufacturer cannot possibly pay the top price for the cream. It is easy to see that right here is one place that we lost money. Now this all comes about because the whole community cannot agree and see the proposition from the same standpoint. One set of men argue that we will get a better test and a better price by having more than one creamery in the market for our cream, and they cannot see that they are losing money by the division. They do not seem to understand that a group of patrons firmly united together can hold a creamery to the straight and narrow path of business rectitude. It is so very easy to check upon a creamery's test, price, etc. Personally, I think it is very seldom that a creamery is crooked. Even if they are not actuated by moral reasons, they know that it is better business to be straight.

In at least one particular, I believe that the rural dairyman is somewhat better off than a great many of his urban brothers, and this is, that he is absolutely compelled to raise every bit of feed that he uses. He cannot buy bran or mill feed of any kind because of prohibitive freight rates, so he must raise his own grain feed as well as roughage. This gives him a chance for two profits, one on his cows and the other on his feed. Whereas, if he buys



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46% PROTEIN AND 10% FAT

UNEQUALLED FOR  
MILK COWS, POULTRY  
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The U. S. Agricultural Department in Farmers' Bulletins No. 58 and 372 states:

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"It is almost without an equal as a concentrated feed."

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Pacific Oil Mills, Seattle, Wash.

#### Electric Light Farm

A. J. C. C. Jerseys

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A few choice cows with official records and tubercule tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease Ellensburg, Wash.

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A. J. C. C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice purebred

POLAND CHINA PIGS

Write for prices.

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkge. Blackleg Pills \$1.00. 50-dose pkge. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

Chicona Farm  
Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

#### HOPE FARM GUERNSEYS

Some very choice youngsters for sale at reasonable prices; pure bred, prize winning stock. Write for particulars.

H. B. DOUGLAS, Prop.  
Ferndale, Wash.

#### Crystal Springs Farm

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

GUY C. CHAPMAN,  
Pomona, Wash.

#### REGISTERED JERSEY HEIFERS

Three solid colored heifers fifteen months old; all out of Register of Merit cows—two are prize winners. Price on application.

DAVID C. DILWORTH  
Buckeye, Wash.

Please mention this paper

FRESIAN-HOLSTEIN CATTLE—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. N. P. SOR-ENSON, Bellingham, Wash., R. F. D. 2.

GUERNSEYS—Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.

#### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

JEFFERY HILTON,  
Marysville, Wash.



#### Registered BERKSHIRE SWINE GUERNSEY CATTLE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM  
Box 34, Milltown, Wash.

#### FINE GOAT RANCH

800 acres of good land. Over half of it can be plowed when cleared. Balance fine pasture. Watered by creeks and springs. Located on the Northern Pacific Railway between Portland and Tacoma. Price \$15 per acre. Good terms. The best proposition for a goat ranch in Western Washington, subsequently to become a dairy farm. This opportunity merits careful consideration by any prospective stock farmer.

ACME REALTY COMPANY  
401 Equitable Building, Tacoma.

#### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE  
Ridgefield, Wash.

#### AUCTIONEER

WM. ATKINSON

Vancouver Bk., Vancouver, B. C. Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

#### YOUNG PEDIGREED O. I. C. HOGS

Wild and Bronze Turkeys. Eggs in season. E. Y. SANDERS, Roy, Wash. Pure bred White Leghorn Eggs, \$1 for 15; \$4.50 per 100.





his feed he must pay somebody a profit for growing that feed. This gives a man more absolute command of his own business, or in other words, he spends more nearly all his time working for himself.

#### More Reading Required.

A study of economics teaches us that a business is a success in about the proportion that the personal equation enters into it. The growing of feed necessitates careful thought and planning ahead for at least a year, and where regular crop rotations are practiced, for several years. This is good, for where a man is compelled to think out one line of his business far in advance he is very apt to include the other lines.

One of the deplorable things that a close observer notices in the isolated districts is the lack of good dairy and farm literature. I do not know whether this is true of other sections than my own, but suppose that it is. I have been in practically every home in our valley, and it is safe to say that agricultural literature is not seen in seventy-five per cent. of them. The people are intelligent but they do not seem to realize the importance of studying the scientific phase of their own business. So far as I know, only three men in the community keep in touch with the literature published by our State Experiment Station, and one of them is not a dairyman. It is not possible for any set of men to perform beyond their ideals so the only thing to do is to raise the ideals. The only practically possible way to do this is through extension work and the agricultural press. It does not matter how brilliant a success a man makes with his own products and affairs, he will be in a measure held back if the general average of his community is much below his average. Each member of this Association should constitute himself a committee in his own neighborhood, to promote the study of agricultural problems through the best agricultural literature.

#### Business Methods Required.

The majority of the rural dairymen have not the proper respect for their own business. Many or most of them run diversified farms with dairying as one of the lines. This rather leads them to look on the dairying as drudgery, as part of the chores that cannot be escaped. This is not a healthy relation existing between the man and his work. A man cannot so regard this very complex and important work and do it justice. Here and there a man is coming to the realization that dairying is one of the big, complex industries, worthy of his whole time and best thought and judgment. It is this kind of man that success is meeting more than half way.

The isolated dairyman needs to pay more attention to the purely business principles. He often feeds well, milks well, etc., then loses the advantages that the well doing gives him by not keeping books and knowing what each cow is doing. It is impossible for even the herdsman to guess right on what return each cow is contributing to the sum total. The only way he can tell absolutely is to weigh milk and test and keep books. I know this side of the business is almost entirely neglected, and this neglect will keep them in

the mediocre class as long as they practice it.

The accident of geographic location makes the "remote country dairyman" and also the other class, which in distinction I will call the "town dairyman." There are no fundamental differences between the two. Poor transportation and unhandy markets change the methods some what and also the results obtained of the former class. The town dairyman is apt to be the keener business man of the two, largely because of the fact that he is thrown more in contact with the hard headed, up-to-date business men in other walks of life. The town dairyman may be unconscious of this inspiration, but it is none the less valuable to him because of that unconsciousness.

Closer cooperation and a study of business methods and business principles will solve most of the problems confronting the rural dairyman.

The present European War should impress upon us the value of cooperation. Germany, because of her wonderful organization, is able to carry her great financial load with apparent ease. The farmer is the hardest man in the world to organize, because of his independence. Each farm is almost a little kingdom unto itself, and the owner of it is jealous of delegating any of his prerogatives. Because of our great needs, we must get over our spirit of ultra-independence and surrender some of our privileges for the good of the whole.

#### PUGET SOUND SOUND HERD HOLSTEIN SALES.

Five Holstein bulls were sold from the herd this last month, as follows: J. A. Scharen of Creswell, Oregon, got the 2nd prize sire calf at the Oregon State Fair this year, Sir Fayne Antonia No. 128158. He is sired by Violet Sir Fayne whose 15 nearest dam average over 24 lbs. butter in 7 days and the dam of this calf is a 13.8 lb. 2 year-old that is a sister to a two year-old heifer making a world's record.

Albert Johnson of Chimacum, Wash., bought the bull Sir Fayne Pietertje Aaggie No. 116600. This young bull is sired by Violet Blossom Sir Fayne and his dam is a daughter of the noted Canadian bull Sir Canary Mechthilde. He has 17 A. R. O. daughters and two have records of 31.38 and 33.72 lbs. butter in 7 days.

## Holsteins of Pontiac and Hengerveld Dekol Breeding



We can spare some more heifers, a few cows and very choice young bulls, ready for service, all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows. We have two herd sires—Sir Korndyke Pietertje Hartog whose sire is closely related to King of the Pontias; his dam is out of Rag Apple Korndyke breeding. The other herd sire is a show bull descendant of Paul Cornucopia and Netherland Prince, and his dam is from high record breeding.

We have a large herd, mostly A. R. O. cows doing practical and profitable dairy work, and are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

John Ammeter of Center, Wash., purchased the bull Sir Fayne Gettie, No. 128160, also sired by Violet Blossom Sir Fayne, dam the heavy producing young cow "Gettie De Kol," many years and not being dry before freshening of 20.57 lbs. butter in 7 days and has given 40 lbs. of milk a day after being milked 11 months.

C. D. Everton of Edmonds, Wash., got the bull Quirinus Nelson, No. 11-6605. His sire is the great bull Quirinus Cornucopia, who is bred in the purple and his first daughters to be tested are making a wonderful showing. One at the age of 2 years made 22.56 lbs. butter in 7 days, 89.25 lbs. in 30 days and in the yearly test so far up to December 1st, which is 124 days in test, produced 9,076 lbs. milk and 344.66 lbs. butter which is a world's record for the giving time in her class. Her best days milk was the 112th day of the test of 81.5 lbs. The dam of this young bull is a high testing cow that made a record at 9 years of age of 19.8 lbs. butter in 7 days. The average of test of the milk for the sired dam and his dam is 4.2 per cent.

H. M. Milkler of Winlock, Wash., got the bull Chimacum Artis Pietertje, sired by Quirinus Cornucopia and his dam is a well bred cow with an official record at 5 years of 21.87 lbs. butter in 7 days.

WM. BISHOP.

## STOCK

### PROTECTING SHEEP.

The two principal drawbacks to the sheep industry in the farm states are dogs and stomach worms. The dog nuisance can be obviated to a great extent by placing dog-proof fences around the pastures. The United States Forest Service has had excellent results in protecting sheep from coyotes and wolves by building fences constructed in the following manner: A barbed wire is first stapled to the posts right on the surface of the ground. Three inches above this is placed a panel of close woven wire 36 inches high, and above this two strands of ordinary barbed wire. Care should be taken to see that there are no openings between the ground and the lowest barbed wire. An inclosure made in this manner, into which sheep may be turned at night, is inexpensive, and dogs will not get through it. Most of the damage by dogs is done at night.

The presence of stomach worms is a very serious drawback. The young lambs become infested with them by

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

### Durocs' Profitable

My 7-month Durocs made world record gains this season. The short feeding time is where the profit is derived and there is money in hogs in the Northwest. Do you want a few youngsters, then write today.

**JNO. B. PETERSON,**  
Mountborne, Wash.



A herd of the best blood of the best strains headed by Champion of the Northwest No. 107287, a boar that has never been outclassed at any age.

Write for prices.

**THE E. N. PEASLEE CO.,**  
Clarkston, Wash.

### Purebred Durocs

Very choice young Duroc pigs offered at reasonable prices. Early application should be made.

Write today.

We buy and sell large quantities of choice hams and bacon. Quality is our motto.

**AUGUSTINE & KYER**  
115 First St. Seattle, Wash

### O.I.C. Hogs

#### English Shire Horses

Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

**GOOD REGISTERED BERKSHIRES** — Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.

**FOR REGISTERED DUROC JERSEY** bred sows and male pigs, write McK. Edwards, Valley, Wash.



eating grass to which the worms have attached themselves, the eggs being deposited by the mature sheep. It is therefore desirable to keep the lambs on land on which the mature sheep have not run, and if possible in cases of bad infestations to keep the lambs away from the mature sheep as much as possible.

### HOG RAISING.

**Making 225 to 250 Pound Porkers in Six Months at a Cost of 3½ to 4 Cents per Pound.**

By J. B. Peterson, Montborne, Wash.

Hogs are rightfully nicknamed "Mortgage Lifters" in this great Northwest if properly handled, but few realize the importance of good care and feeding. Some people think a hog "is a hog" and can do well in the deepest of mud, but we are thankful that the hog raisers of today are overcoming that idea and are giving them the same care as they do their horses, cows, and sheep.

We are beginning to realize that if you stunt a pig or hog he will not pay for his feed.

#### Making the Proper Start.

Each breed of hogs has its particular strong points. My advice to the man who is starting into hog raising is for him to select that breed which he likes. Then get the best pedigreed brood sow and boar that he can afford because the best is none to good. He will then have a good strong foundation to build up a strong herd, that are quick maturing and prolific, while it would take years to build up a good herd from inferior grades. Never use a grade boar even if you have grade brood sows. Never use a sow that has been stunted, for breeding purposes. Select your boar and brood sows that comes from a large litter and the ones that makes the greatest growth, providing they nearly conform to the requirements of the breed. Never keep a brood sow if she does not have at least six strong pigs the first litter, and do not keep the sow that eats her pigs.

#### Housing.

There are two kinds of farrowing houses, the stationary and the portable. One needs both where there are from fifteen to twenty brood sows farrowing about the same time. The kind of farrowing house I prefer is one with pens on each side with a four foot hallway through the center, with plenty of light and no direct drafts through the pens. The pens should be 10x12 feet with a similar space on the outside for her to exercise. Clean your pens out every day the same as you do your dairy barn.

The portable farrowing houses I have are built on runners. The runners being placed one foot in on each side and the building is 8x10, and 3 feet high in the rear and 6 feet in the front with two doors, one above the other. On the inside a railing is placed around the walls so the sow cannot lay on her pigs. This house can be moved from place to place in the clover or alfalfa field and by putting up a few panels around can make a nice lot for the brood sow and her pigs. I also have doors on each side so that by placing the building end to end with these doors open I can use them as

### A NEW BOOK FOR FRUIT MEN.

One of the most valuable as well as the most ambitious works to come from the local press is "The Encyclopedia of Practical Horticulture," with Granville Lowther as editor-in-chief and William Worthington as associate editor.

It is published by the Encyclopedia of Horticulture Corporation, of which W. M. Fleming is president.

The work is a reference system of commercial horticulture. It presents an undertaking never before attempted—that of covering the practical and scientific phases of horticulture with special reference to fruits and vegetables.

The Pacific Northwest has been made the field of research, and the editors have been assisted by the best known scientific and practical horticulturists. The preface to the first volume sets forth six salient points:

1. We are living in the midst of one of the best fruit districts of the world, and have learned from practical experience what the fruit grower needs.

2. Our fruits, especially our apples, command the highest prices in the markets of the world.

3. The editors have visited all the principal fruitgrowing sections of the United States and parts of Canada.

4. They have consulted many of the most prominent horticulturists, and have obtained information from all available sources.

5. They have consulted the literature that has seemed best adapted to their needs and have quoted from able writers, giving to each and every one due credit.

6. They have embodied articles from the ablest contributors and specialists; have tried to bring everything up to date, and to condense into three volumes that which they believe is of the most practical value to the fruit grower.

The editors have not tried to be technical and yet have aimed to make all of their teachings conform to the facts as scientists have discovered them.

The plan is to set forth in their natural order all the steps and processes for the propagation, maturing in their highest perfection, harvesting and marketing of all the commercial fruits and vegetables.

All the information necessary for the selection of proper seeds or stocks, site, soil and climate, the kind of preparation to make and care to give, the sort of cultivation, fertilization and pest prevention to provide for the costs of production, is given.

All processes set forth in the three volumes are illustrated with 750 drawings and photographs.

The "Encyclopedia" represents an out-

standing of many thousands of dollars. It is a work of highest excellence, meriting generous support from the people of Washington and the Pacific Northwest, the resources of which region it portrays in a most thorough and attractive manner.

The office of President W. M. Fleming is 407 Miller Building, North Yakima, Washington.

### MILLIONS MORE MOTOR CARS FOR FARMS.

#### Possibilities Are Highly Scratched.

Nearly one and a half million automobiles have been sold in the United States since 1902 when the business may be said really to have begun.

The number of these machines that have gone to the scrap heap is as yet negligible for commercial reckoning. The oldest is only twelve or thirteen years old. You see the quaint old timers in service every day.

Next year, according to the forecast of the trade, nearly a half million more cars will be sold. These facts cause many to wonder where these hundreds of thousands of cars will go next year—and the years after that. They figure that there is now one automobile to each seventy or eighty people in the country.

Jasper, the well known financial authority and writer for Leslie's Weekly partly indicated the answer when he says, "Half of next year's output will be sold to farmers more largely for utility than for pleasure." The fact is, when the farm market is thoughtfully considered, it is found to be the dominant factor in the future of the automobile industry. And Jasper's words, "more largely for purposes of utility than for pleasure," furnish the reason.

Not quite 50 per cent. of the automobiles in use now are owned by farmers. But there are in the United States, according to the census of 1910, six million three hundred and sixty-one thousand, five hundred and two farms, with a total value of forty billion nine hundred and ninety-one million, four hundred and forty-nine thousand, and ninety dollars—an av-



### LARROWE'S DRIED BEET PULP

is becoming a standard portion of every ration in a rapidly increasing number of dairy herds. Its worth as a succulent, milk-producing, vegetable feed has been fully proven by large and small feeders.

#### The New World's Champion Cow—Tilly Alcartra

—whose milk record for the past year was over 30,000 lbs. —ate Larrowe's Dried Beet Pulp daily, and to this is attributed a large part of her splendid record. YOU can increase the supply of milk from your cows at least 1 to 5 lbs. per cow a day by feeding Larrowe's Dried Beet Pulp. It is put up in 100-lb. sacks and can be had either plain or with molasses. Order from your dealer NOW.

#### FREE BOOKLET—

"Profitable Feeding"—giving valuable information and feeding instructions will be sent to any address on request.

#### THE LARROWE MILLING CO.

607-608 Central Building, Los Angeles



erage value per farm of six thousand, four hundred and forty-four dollars.

A supply averaging one automobile to a farm is a long way in the future—but the demand is not inconceivable. Some day, without doubt, it will be approximated—and when it comes it will represent a degree of progress and efficiency as far ahead of the present as the supply of that day will be ahead of the present supply.

### The Larrowe's Molasses-Dried Beet Pulp

and other Stock Feeds are sold by our firm. Write for prices on trial lot shipments.

#### THE W. W. ROBINSON COMPANY

Hay, Grain and Feeds—Wholesale 1717 Railroad Ave. S., Seattle, Wash.

#### ATTENTION, Mr. FARMER!

Have you received our 1915 Seed & Implement catalog? If not, write for one at once.

#### TACOMA IMPLEMENT COMPANY

1521-23 Pacific Ave,

Tacoma, Wash.

pen about five inches from the floor. This the pig can run under. Do not have too much bedding in the pen at farrowing time.

The sow should have nothing to eat or drink except plenty of water at a temperature of about 85 degrees F. for the first 36 or 48 hours. Then gradually increase her feed till she will have all she can eat. There is little danger of milk fever if this is carried out. The sow should have a rich concentrated feed while the pigs are sucking. I use two parts of 90 lb. shorts to one part of middlings and one-tenth part of oil meal or tankage mixed to a thick slop. I give her all she cares to eat, but

### Poland China Boars

Have some good ones 4 months old, also boar pigs of good breeding. Gilts all sold.

F. C. BRUCE

Grandview, Wash.

being careful not to overfeed her. When the pigs are about two weeks old I start to feed them milk in a separate trough in their run way with a little middlings mixed in; and as they grow older I add a larger amount of middlings with shorts and oil meal in about the same proportion as I feed the brood-



sow. I see that they have all they can eat. I always see that their trough and that of the broodsow never starts to get sour. The pigs are virtually weaned by the time I take the sow away at eight weeks of age.

See that the pigs get plenty of exercise and green succulent feed besides all the shorts and middlings they can eat. It costs me from 3½ to 4 cents a pound to put the flesh on the pig till they are six months old. They are then ready for the butcher and averaging from 225 to 250 pounds.

#### FEEDING EXPERIENCE.

In giving his experience on feeding dairy cows at the recent annual meeting, Mr. E. L. Brewer stated he often used a much wider ration than is generally recommended, but in so doing observed closely the likes and dislikes of the cows and kept close watch of their total weight and their production. When a cow begins to fall off in flesh, then she must have more grain or concentrate. He said the only satisfactory substitute for bran he had been able to obtain was dried beef pulp and it was the only part of the feed ration he was buying at the present time, but considered it both economical and necessary.

#### SKIM MILK FOR PIGS.

##### Comparative Feed Value.

Mr. P. C. Goodrich demonstrated that skim milk has a higher feeding value when fed to young pigs in connection with grain than when fed alone. When hogs are selling for \$8 per 100 skim milk is worth 50c per 100( provided that 3 pounds of skim milk are fed to 100 pounds of corn meal. Where corn is not so cheap as other mixed grains, ground, these may be substituted, but are less fat producing. The pig would perhaps not mature so early though the gain in flesh might be as much. The Connecticut station found an average ration of 12.9 pounds skim milk with 3.2 lbs. grain produced the highest gain compared with either a greater or a less proportionate amount of the skim milk. At the Utah station the time required to make 100 lbs. of gain was 79 days for the hogs fed on milk and grain, 116 days for those fed on grain alone, and 147 days when the feed was milk alone. The milk-and-grain fed lots required 2.58 lbs. of digestible matter, the milk-fed lots 2.85 lbs. and the grain-fed lots 3.19 lbs. to make one pound of gain in live weight." In this case 100 lbs. of skim milk took the place of 23.2 lbs. of grain in the mixture.

The younger and smaller the hogs the higher is the value of milk. Skim milk, rich in protein and mineral matter, should always be combined with starchy carbohydrates, such as corn, barley, kafir, milo, etc., in which case it becomes one of the most useful of all available feeds for the pig.

#### FEEDING ALFALFA TO HORSES.

For 14 years we fed alfalfa and corn to fatten our shipping horses and topped the market in Chicago several times with horses fed in this manner. We always considered that we saved a great deal of grain by feeding alfalfa hay. These horses were fed in the open and had free

access to all of the alfalfa they wanted.

One pound of alfalfa or other hay and about 1¼ lbs. of grain per day for each 100 lbs. of the horse's weight make a good ration for the working horse.

Horses like alfalfa stems. Refuse from cattle racks is very acceptable to horses.

Feed mature horses first and second cutting alfalfa which is free from mold and dust.

To make the best horse hay, alfalfa should be allowed to stand until well out in bloom.

In curing horse hay it is well to keep in mind that the dust which is present in so much alfalfa is largely a result of the presence of foreign moisture such as rain or dew at making time, rather than the presence of a little moisture within the plant.

Never feed wet alfalfa hay to horses.

A sudden change of feed deranges the horse's digestive system. Horses accustomed to alfalfa as a regular part of their ration are seldom troubled from its use.

If alfalfa hay is stored in the barn for horses, it is well to sprinkle it generously, while mowing it away, with a mixture of salt and air-slaked lime, equal parts.

Growing draft colts have seldom, if ever, been injured by eating too much alfalfa and oats.

Good, well-colored alfalfa is of practically the same composition as wheat bran and is of equal value to it in the horse ration.—Exp.

### The OAK HEIGHTS STRAIN of

Single Comb White Leghorns

Have been built up by

### Eight Years of Careful Selection

and breeding for heavy egg  
production.

Vigor and good size.

From them I offer for sale

### BABY CHICKS

and Eggs for Hatching at

A very moderate price. With every order I send free book on "Raising the Chicks," besides other valuable information.

I guarantee safe arrival of Chicks to any point I ship.

Send for free catalog now.

### Oak Heights Poultry Farm

Capt. A. Waldwick, Proprietor  
Route 3, Box 679—Tacoma, Wn.

### EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100.

Write for mating list and grit machine circular.

**FRED A. JOHNSON**

518 35th St., Tacoma, Wash.

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

#### SKIM MILK FOR LAYERS.

According to the experiments conducted by the Indiana Experiment Station, \$1.73 was returned per hundred pounds of skimmilk purchased at 30 cents. These experiments covered a period of two years; one pen of laying hens received corn, wheat, oats, bran, and shorts in the same proportion, in addition to all the skimmilk the fowls would drink, and another pen received only the grain portion of the ration that the former received. In averaging the results obtained from feeding these rations through two years of experiments, it has been shown that the average number of eggs laid per hen receiving grain and skimmilk was 133.5 eggs, whereas the hens that did not receive skimmilk with the grain ration only produced an average of 36 eggs per hen. It was also shown that during the winter months, December, January, and February, when eggs are the highest price, that the pen receiving the skimmilk produced 7 per cent. more eggs even than the pen receiving a grain ration supplemented with meat scraps, a feed so generally recognized as a great egg producer.

#### ARTIFICIAL BROODING

##### OF CHICKENS.

The artificial method of brooding chickens, according to the U. S. Department of Agriculture's specialist, consists in supplying artificially as nearly as possible the heat furnished by the hen under natural conditions. The temperature of a hen is about 100 degrees F., but as hens seldom sit closely on chicks the latter do not receive this degree of heat. Hens adapt their methods of brooding to conditions such as temperature, size of the chickens, wet weather, etc., and the operator of a brooder must

meet these conditions as well as he can. This lack of adjustability to changes is one of the weakest points in our present brooders and brooder systems. Some of the most important faults in the management of brooders are over-crowding and lack of ventilation, while the chickens fail to get sufficient exercise. The brooder should supply the proper temperature, be readily adapted to changes in weather conditions, and be easy to clean and well ventilated.

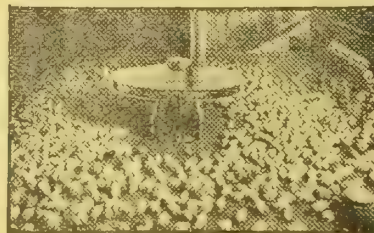
Chickens are usually left in the incubator from 24 to 36 hours after hatching, without feeding, before they are removed to the brooder, which should have been in operation for a day or two at the proper temperature for receiving the chickens. A beginner should try his brooding system carefully before he uses it. After placing the chickens in the brooder they can be given feed and water. Subsequent loss in chickens is frequently due to chilling received while taking them from the incubator to the brooder. They should be moved in a covered basket or receptacle in cool or cold weather.

#### DANISH EGG PRODUCERS.

As an illustration of the practice with poultrymen in Denmark Mr. Franz Nielson, Bachelor of Science, owns an egg distributing center and tests the laying powers of his hens by means of trap nests, selecting the eggs of the best layers for breeding purposes, making soup of the star boarders. In reply to a criticism regarding the utility of poultry testing, Mr. Nielson wrote as follows:

"Let us consider for a moment a circumstance that all have agreed in recognizing as an established fact, viz., the progress and development of the Danish dairy industry during the last 20 or 30 years. Reliable

## The Fresh Air Brooder Stove



THIS is our NEW SELF VENTILATING BROODER STOVE. AUTOMATIC TO THE MINUTE. Economy's climax. No more crowding around the stove at night. HEAT EQUAL in all parts of stove room. Petaluma's severest critics pronounce this new wonder the peer of all brooding systems. Bank and our personal guarantee always. Get our latest catalogue. We can help YOU.

**JOHN L. CRAIG**

1022 Western Ave.

Seattle



### An Honest Incubator At an Honest Price

Hot Water, Copper Tank, Self Regulating, Chick Nurseries. Safest, tested thermometer, best construction of three walls all over with asbestos between each wall. So simple that anybody can make big hatches. Get our catalogue and low delivered price. Brooders from \$2.75 up.

St. Helens Incubator Co., Toledo, Washington

#### 50,000 WHITE LEGHORN CHICKS

Bred for eggs—the kind that make the chicken business a success. Hatchery starts Jan. 1st. Book your orders with us now.

**ST. HELENS INCUBATOR CO.**

Box 9—H

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## THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

### EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES. SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK. Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.

THE TANCRED FARMS.

KENT, WASHINGTON.



statistics indicate an average increase in the annual milk yield of about 2,000 lbs. per cow or 30% without any appreciable increase in the amount of feed consumed. Successful breeders are fully agreed that this progress is due in a great measure to intelligent rearing, breeding, and feeding based on cow testing records. The hereditary transmission of the quality of giving milk rich in butterfat has been definitely established by the cow testing records during the last ten years and has led to an increase of the butter yield from the same quantity of milk amounting to 20%. These facts are based on practical experience and therefore constitute a sound basis of argument.

"Now with regard to dairy cows, in their case records are compulsory. No animals are awarded prizes at the shows except those that have been tested practically and found to possess good performance, physique, and pedigree.

"If poultry keepers wish to attain to anything like real, permanent progress they must travel along the same road. To award prizes for handsome, well-made hens, without inquiring about their egg-laying powers would only serve to mislead poultry keepers, to encourage inutility, and to play a game of haphazard with regard to profitableness.

"Trap nest control alone cannot bring about the desired progress; there are other weighty points to be considered in selecting breeding stock. March birds placed on the strength of the flock in the autumn should be controlled by means of trap nests. The following spring, the birds that have distinguished themselves as layers during the winter ought to be submitted to a careful examination some day before the selection for breeding is made. In the course of this examination each pullet should be inspected and points awarded for:

1. The virility and physique of the bird.
2. Its conformity with the standards of the breed.
3. Its plumage and color.
4. Its pedigree based on trap nest records.
5. The shape and peculiarity of the egg.
6. The color and shell of the egg.
7. The weight of the egg.

"These points together with the trap nest records constitute the fundamentals to be considered in selecting breeding stock."

Mr. Nielsen's exposition of poultry testing and the selection of birds for breeding illustrate the influence that dairying has exercised upon the egg industry says the Hoard's Dairyman. During the last ten or twelve years, trap nest control has been widely practiced and flock books containing the records and pedigrees of good laying strains have been carefully written up. This practice has almost doubled the averaging laying powers of Danish hens in general.

#### LEGHORNS TOP EGG RECORD.

At the national egg laying contest which closed December 1st at the Missouri State Poultry Experiment Station, Lady Laymoore, hen No. 611, a S. C. White Leghorn from Nebraska, tied the world's trap-nest record for an egg laying contest. She laid 286 eggs in twelve months. She beat

Lady Showyou's record by five eggs. The English pen of S. C. White Leghorns won the grand championship by laying 299 eggs. Every one of the hens in this pen, except one, laid over 200 eggs.

All White Wyandottes averaged 190 eggs per hen; all Barred Plymouth Rocks averaged 176 eggs per hen.

#### SELECTION FOR GOOD LAYING

Too much emphasis cannot be placed on the importance of a careful selection of the layers and breeders by the market egg producer.

Experiment Station tests have shown that the "medium" or "good layer," may produce the largest number of "good layers" in a flock so far as shown by the use of the trap nest and records of individual birds. There has been no reason given for this except that the heavy laying has reduced the vitality of the bird. To my mind it is clear, as it has been proven by experience, that it is just as much, or perhaps more. The male as the female, which is responsible for the increase or decrease in egg production.

If a flock of good layers are mated to males of the same type or build as themselves with record mothers and grand mothers, good layers will be the result, but if the good layer is mated to a male known as a poor egg type, a decrease in egg production of the offspring will be the result.

The 200-egg hen will not produce a 200-egg pullet if mated to a long bodied, narrow breasted and tightly built, pevic boned male.

Egg production is increased or decreased in proportion to how the breeders are selected according to their ability for producing good layers. Vigor plays an important part in egg production, for no matter how a bird is built, it cannot produce good layers if weak constitutionally.

The least sign of weakness should barr that bird from the breeding pen.

Comfortable housing, good feed and care will aid greatly in obtaining the desired results.

A. WALDWICK.

R. F. D. 3, Tacoma.

#### TACOMA POULTRY SHOW SPECIAL AWARDS.

The Tacoma Poultry Show held on the closing days of 1914 was a decided success. The exhibit of fowls throughout lined up more nearly to the standard requirement than in any show previously held. The Leghorns, White Wyandottes, B. P. Rocks and the Reds were all highly praised by W. S. Russel, of Ottomwa, Iowa, who placed the scores. Fred Johnson, Tacoma, had the highest scoring White Leghorns, and the Evergreen Nursery, Tacoma, the best White Wyandottes. Mr. King of Everett, best utility Reds according to awards made.

##### Special Honor Winners.

Best six males—First, G. A. Churchill, Tacoma; second, Woods Poultry Farm, Kegel Brothers, Little Rock. Best female in show—Woods Poultry Farm, Seattle. Ledger special, for largest capon—T. D. Whitman, Tacoma. Wheeler-Osgood Co. special for the largest display—Fred A. Johnson. Frye & Co. special for best pen in weight variety—Evergreen Nursery, Tacoma. For a best pen non-weight variety, Charles S. Lundgren, Tacoma, won. Ad Club cup—Kegel Brothers. Best display of Wyandottes—Craiglea Poultry and Fruit Farm, Sumner. Kenworthy special on Rhode Island Reds—George W. Brewer, Seattle. Mahncke cup—Miller Brothers on White Leghorns.

F. C. Hart cup for best display of Buff Leghorns—J. H. Erlanger, Tacoma. The American Buff Plymouth Rock club ribbons went as follows: Best colored female, Harry H. Collier; best shaped female, W. S. Cotten, Walla Walla; best shaped male, Sam J. Hawkins.

Buff Rocks, best display—Sam L. Hawkins, Tacoma. Best Pullet—H. H. Collier. Best Cockerel and best hen—W. S. Cotten. White P. Rocks, best display—Ward's

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL  
Puyallup, Wash.

**FOR SALE**—Acetylene Gas Generator, brand new, only half price, 15-burner capacity. L. E. NEVINS, Sylvan, Wash.

Poultry Yards, 2nd best display, Ed Hagne, Tacoma.

Best Cockerel—Bertram. Partridge P. Rocks, best display—Antonson Bros., Seattle.

White Wyandotte, National Wyandotte cup and Mierow cup—Evergreen Nursery, Tacoma.

Second best—Hoyts White Wyandotte Ranch.

Partridge Wyandottes, best display—T. H. Teeter, Tacoma. Second best, Fred A. Johnson.

Buff Wyandottes, best display—Wm. Anderson.

Silver Wyandottes, best display—Craigielea Poultry and Fruit Farm, Sumner; second best, Sterling Wyandotte Ranch.

R. I. Reds, best display—Geo. W. Brewer, Seattle; second best, W. G. King, Everett, Wash.

White Leghorns, best display—Miller Bros., Fern Hill; second, D. B. Trout.

Best Pullet—Harry Anderson; best hen E. L. Colburn.

Buff Leghorn, best display—J. H. Erlanger; second, A. D. Larson.

White Orpington, best—E. T. Crawford; second, G. A. Churchill.

Buff Orpingtons, best—Miss Lucy R. Scudder; second, D. A. Gove.

Brown Leghorns, best—Fred A. Johnson, Tacoma; second, Miller Bros., Fern Hill.

Black Minorcas, best display—Anton Siegle; best pullet, O. B. Winters.

White Minorcas, best display—R. E. Green; best pullet, H. J. Conrad.

Anconas, best—C. C. Jezek, Tacoma. Silver Campines, best—Miller Bros., Fern Hill; second, Sunshine Poultry Farm.

Butter Cups, best—R. M. Palmer; second, T. D. Whitman.

## Facts and Figures

Mr. A. J. Galloway, proprietor of the Table Grove Nurseries, Healdsburg, Calif., has produced some very choice walnut trees of the Franquette and Mayette varieties. Being grafted on the native black walnut stock, they are very hardy and bear at an early age. The trees are being sent to planters in different sizes from 2 to 8 or 10 feet in height, going to all parts of the Pacific Coast.

#### CATALOGS RECEIVED.

The 1915 catalog of the Chas. H. Lilly Co., Seattle, is 208 pages, describing and illustrating all their lines in one book; 96 pages are devoted to seeds, other part to spray materials, fertilizers, bee supplies, poultry and stock foods. The question of soil fertility is well handled, based on the authority of such men as Prof. R. W. Thatcher, and Prof. E. B. Stookey. The poultry section answers a thousands questions for success and profit by R. R. Randall.

Reliable information as to methods and descriptions and correct prices have been the aim in this publication. Send for a copy which is mailed free to any applicant.

##### Gill Brothers.

Gill Bros. Seed Co., Portland, Ore., are growing a large proportion of the seed they handle, making specialties of corn, beans, peas, cabbage, onions, and practically all of the root crops. Their catalog gives full description of their methods and productions and is free to every reader who applies to Gill Bros. Seed Co., R. 1, Portland, Oregon.

##### Portland Seed Co.

The Portland Seed Co., Portland, Ore., is sending out their 1915 catalog of 146 pages with Golden West Corn design on front cover, suggestion of their ability to care for corn seed orders of every description. The firm is too well known among our readers to need further comment but there are many items of interest in this new catalog which will interest planters located in the Northwest. Copies are free to all applicants.

##### Aablin-Ebright Seed Co.

The Aablin-Ebright Seed Co. catalog, Seattle, comes in sweet pea cover design and contains a complete list of high testing seeds and supplies. This firm has introduced seeds of several choice root crops from the old country where the climate is very similar to that of the Pacific Northwest and their introductions have been tried out here with excellent results. Every dairyman and farmer should have a copy of this catalog free for the asking.

#### LEADING STUMP PULLING FIRM BUSY.

A. J. Kirstin Company Opens Branch at Salem, Oregon.

That the whole United States is on the eve of a long period of prosperity, is being more appreciated every day and

## Eggs are the Prizes

We breed for.

Trapnested

S. C. White Leghorns

and

Barred Rocks

Day-old Chicks and Hatching Eggs  
Pedigreed Birds

Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

Dept. H

HADLOCK, WASH

## COCKERELS FROM GREAT LAYERS

Higher grain prices necessitates greater production per bird. In addition to correct keeping and feeding the surest way to get more eggs is to breed from pedigreed cockerels which have 200 to 250 egg trap-nested White Leghorn mothers. Cockerels of this class sold at \$3 each.

GEO. R. SHOUP

Route 3

Lynden, Wash.



**BOOK ON**  
**DOG DISEASES**  
**And How to Feed**

Mailed free to any address by the Author

**H. CLAY GLOVER, V. S.**  
118 West 31st Street, New York

America's Pioneer Dog Remedies

## Kings

**S. C. REDS**

Are noted for high yearly egg records, with low tendency for brooding. Adaptable — Profitable. Stock and Eggs for sale.

**W. G. KING**  
1118 E. Grand Ave.  
Everett, Wash.

acknowledged by the men in our high government offices, as well as the leaders of our mammoth industries. Perhaps this is brought home more forcibly by the recent statement of John Skelton Williams, Comptroller of Currency at Washington, D. C., when he said, "We shall soon be looked up to as the store house of the world. Our fields already supply two thirds of the cotton that clothes the human race, while from our harvest fields is already being shipped the grain to supply bread to the millions in Europe." This statement is only one of many from men who know and should have the earnest consideration of every man with an acre of producing land, and to the man who has his land covered with stumps, it is a suggestion to get his land in shape to share the prosperity that is his.

#### More Stump Land Being Cleared.

The A. J. Kirstin Company of Escanaba, Michigan, the leading makers and originators of hand operated stump pullers, have just established a direct factory branch at Salem, Oregon, evidence that these keen business-men foresee a great movement to turn the thousands of acres of stumps in the northwest into productive land. A large investment was necessary to establish this plant here, and the value to the farmers and land owners is hard to estimate, as these people sell Stump Pullers with complete equipment, from \$37 up, making first cost very moderate compared with efficiency and ease of operation.

#### Hints to the Stump Land Owners.

The man who owns profitless stump land will do well to get in position to make his holdings profitable, everything necessary being now at hand. The A. J. Kirstin Company in Salem, Oregon, is conducted under the personal supervision of two well known and practical stump men, who have spent years in a study of our Northwest stump problem. Mr. Watt Shipp, besides being President of the Company, is the largest independent dealer in Du Pont explosives in the United States and has developed this business during his 30 years of business experience in the State of Oregon. Mr. J. F. Gorman, the general manager, has spent years in the development of stump pullers under local conditions, and his latest invention is now being marketed as one of the regular Kirstin models for 1915.

#### Big Call For Catalogues.

Requests for the new catalogues are being received by the hundreds from all over the West, from Arizona, clear up into British Columbia, all of which demonstrates the demand for a simple, cheap and effective stump puller such as the Kirstin people make, and the fact that the progressive stump land owner is also preparing to share in the prosperity that is within his grasp.



# Another Big Surprise From Bill Galloway—Listen!

## New Profit-Sharing, Price-Reducing, 1915 Selling Plan. Practically Makes Every Customer a Galloway Stock Holder.

Ten years ago the Wm. Galloway Co. was a mere infant among manufacturing concerns—barely able to sit up and take notice—its birthright was just an idea and its future depended entirely upon how the farmers of America liked that idea.

The idea that I had in mind was this—To actually manufacture the implements the farmer needs and to sell them to him direct from Factory to Farm—sell them at rock-bottom prices that wouldn't have a penny of agents' and dealers' profits in them.

This idea of mine, put in practice, scored a big hit with up-to-date farmers. My low prices were a big surprise and my high-grade goods pleased every man who bought of me. Business came by leaps and bounds and every order meant a pleased customer. Today my idea has grown into an institution doing a business that runs into the millions. I have customers by the tens of thousands from Coast to Coast and from Canada to the Gulf. Imitators of this plan have sprung up from time to time but they have fallen by the wayside, while the Galloway Co. has grown larger and better.

A few years ago—before I started in to make and sell Galloway products—farm appliances were sold through the jobbers, agents and dealers and each made a profit on them. A 5 H. P. engine then cost you \$250.00 to \$350.00, a cream separator \$95.00 to \$150.00, a manure spreader \$125.00 to \$135.00.

I cut those prices right square in two—sold those articles for 50% less—right off the reel. Then as my factories grew and my output increased, from year to year, I lowered my early-day prices every time I cut down my factory expenses. Today I'll sell you a real 6 H. P. engine—a crackerjack, quality and satisfaction guaranteed to you—for only \$98.75. I'll sell you a cream separator as good as any made, and a whole lot better than most of them, for \$42.50, and an absolutely first-class spreader at a price any farmer can afford to pay—from \$64.75 on up.

### Here It Is—Like Getting Money From Home

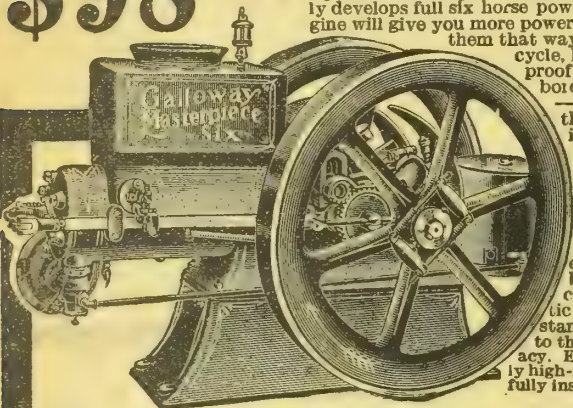
Now, I'm offering you a bigger value than ever this year—1915. I'm going to make the bargains you get of me, in high-grade, low-priced goods, bigger than I ever could before.

I want you to be a Galloway customer and I'm going to give you a share in Galloway profits in addition to the value you get in my goods. I'm selling this year on a new plan—you get the benefit of a sliding scale, price-reducing schedule that, in effect, practically makes you a Galloway stockholder without your investing a cent, except in Galloway goods that give you a big value received in service. The more engines, separators, spreaders, etc., that I make and sell in 1915 the less these articles will cost you. Prices slide right down as my production goes up and you get the benefit. Get my proposition today. It's a big thing—best and biggest offer ever made.

## A Real 6 H. P. Engine Now Only \$98.75

Or Even Less On My Price Reducing Sliding Scale Plan

By "real 6 horse power engine" I mean one that actually develops full six horse power. Any Galloway engine will give you more power than rated. I make them that way. A horizontal, four cycle, hopper cooled, frost-proof engine, with a big bore and a long stroke—the ideal type for the farmer's service. As simple, easy to handle, strong and as durable as an engine can be. Made in my big engine factory, by skilled mechanics, on automatic machines. Every part standardized and machined to thousandths-of-an-inch accuracy. Every part made of absolutely high-grade engine material. Carefully inspected—fully guaranteed.



## The Power Sensation of the Year

I want you to look closely at this engine and to consider what it means to you to be able to buy it at the price I make to you.

Hunt up every engine catalog and price list you can find and look them over on this price question. See if you can find anybody but Galloway offering a guaranteed-to-be-high-grade engine, developing more than 6 horse power, for the price I quote. Ask any man who is selling engines to sell one of that capacity to you at my price and to send it to you on trial and put the kind of a guarantee on it that goes on my engine.

● You'll find that there's only one place where your money will buy this big engine value. I positively give you more for your money in this engine than you get anywhere else and remember, my 6 H. P. is a real 6 H. P. engine and then some. I don't short change you on power or in quality or on price. This engine will absolutely satisfy you in power, fuel economy, reliability, durability in service.

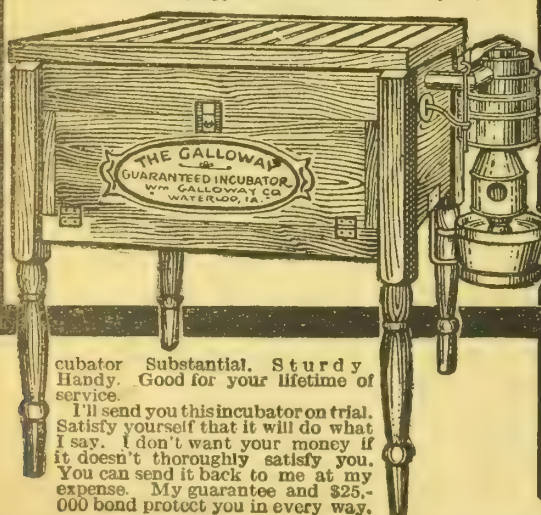
I'll send you this engine on 30 days' free trial and you can put it to work and test it in any way you want to. Find out just what it will do for you—how it will save you labor, time and actual money. Judge it by any fair standard and an engine can be judged by. If it doesn't satisfy you send it right back to me at my expense. It's guaranteed in every way and the guarantee backed by my \$25,000.00 bond.

Do you want to save \$60.00 to \$250.00 when you buy an engine from 6 h.p. to 16? If you do you'll buy a Galloway. I make engines of every practical size and for every service. I sell them all at Galloway low prices and under my new profit-sharing schedule.

## My Incubator Backed By a \$25,000.00 Bond Guarantee

Here's my new incubator—a genuine Galloway value. Made as good as an incubator can be and sold at a Galloway price that puts it way ahead for the man who wants full value for his money.

Built on scientific principles by skilled incubator specialists. Hatches any eggs that can be hatched by any incubator.



Incubator Substantial. Sturdy Handy. Good for your lifetime of service.

I'll send you this incubator on trial. Satisfy yourself that it will do what I say. I don't want your money if it doesn't thoroughly satisfy you. You can send it back to me at my expense. My guarantee and \$25,000 bond protect you in every way.

### Sanitary Self-draining Supply Tank

### New Sanitary Easy to Clean Close Skimming Disc Bowl

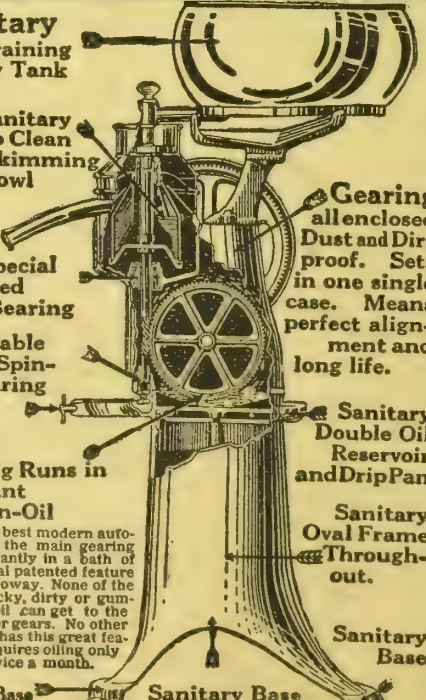
### New Special Patented Neck Bearing Adjustable Lower Spindle Bearing

### Bowl Clamp

### Gearing Runs in Constant Bath-in-Oil

Like the best modern automobiles—the main gearing runs constantly in a bath of oil. Special patented feature in the Galloway. None of the heavy, sticky, dirty or gummed-up oil can get to the bearings or gears. No other separator has this great feature. Requires oiling only once or twice a month.

Sanitary Base



Gearing all enclosed Dust and Dirt proof. Sets in one single case. Means perfect alignment and long life.

Sanitary Double Oil Reservoir and Drip Pan

Sanitary Oval Frame Through-out.

Sanitary Base

# FREE

## The New 1915 Galloway Catalog The Greatest Merchandise Book Published

My big, new 1915 catalog is ready for distribution now. It's absolutely free to you and it is crammed full of bargains that you can't afford not to know about. It's really more than a catalog. It's a picture book of modern merchandise, a buyer's guide for every farm home. I save the farmers of this country a million dollars every year on goods they buy of me in the first cost of the goods alone, and I give them quality in everything they buy of me, too. I don't sell anything that doesn't have quality—don't want to, couldn't afford to if I did.

My big catalog offers you bargains in engines, cream separators, incubators, brooders, manure spreaders, harrows, elevators, gates, fencing, grain drills and dozens of other necessities for the farmer's daily use—bargains that mean a big saving, in actual cash to you. It contains bargains in all sorts of household appliances and furniture, also, and every one of them is big enough to be worth your attention.

You need my catalog. Send for it today. Don't put off doing so. It may save you a lot of money on something you're going to buy next week and that you want to know about right now.



## Spreader Prices Smashed Now Only \$64.75 and up

Give your fields a chance to grow more stuff for you. My New No. 8 Low-Down Manure Spreader, used right now, will mean a bigger crop next year. You know that. My New No. 8 is absolutely the best spreader you can buy any place. It's got every good quality a spreader could have—strong, dependable, good for long years of service. Steel gears, coupled with steel channel, steel wheels, flexible rake, high speed beater. Double chain drive. Endless apron. Force feed. My great book "A Streak of Gold" is free to you. Tells all about the profitable applying of manure. Write for it today for price reducing schedule.

## My Cream Separator Prices Have Gone Down--Down--Down

I'm making, right now, the best cream separator that's made—the New Galloway Sanitary Cream Separator. I'll put my separator up against any other machine made for a three months' test; you to be the judge of the performance of both machines. If you think, at the end of three months, that there's any cream separator on earth you'd rather have than the Galloway you can send my separator back to me. I'll pay every cent of the freight both ways. You won't be out one penny.

I'm selling this separator at a price that will absolutely save you from \$35.00 to \$50.00 on first cost alone. I can prove that to you. I'm going to save thousands of dollars for separator users this year and please hundreds of new customers with my separator.

## Cut Out Coupon—Get Catalog and Special Proposition

This coupon will bring you any Galloway catalog you want, free. Just fill in the blank line with the name or names of what you want, write in your name and address and mail me the coupon. I'll send the catalog by return mail.

Wm. Galloway, Pres., Wm. Galloway Company  
2127 Galloway Station, Waterloo, Iowa

I am interested in.....  
(Give name or names of articles you might want.)

Please send me your Catalog and full information about your new, profit sharing, price reducing, sale plan.

Name.....

R. F. D.....

Town.....

State.....

Wm. Galloway, Pres., William Galloway Co., 2127 Galloway Station, Waterloo, Iowa



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., FEBRUARY, 1915

No. 2

## COMMUNITY BREEDING

**Functions of State College to Instruct and Create Organizations Rather than to Engage in Business.**

At the Washington Pure Bred Live Stock Association recently held at Olympia, Prof. William Hyslop, head of animal husbandry State College, Pullman, outlined some good plans for community breeding. He cited instances showing how a community may benefit by adhering to some standard plan for raising stock of uniform type of a chosen breed. Stockmen of the Pacific Northwest are on a good foundation for pulling together, but they will profit by adhering to some fixed ideal working

unitedly from the community standpoint. In this respect good showing has already been made in the development of Holsteins, and to some extent Jerseys and Ayrshires, also Guernseys, but in the latter three breeds the efforts are a little too scattering for the best results to the individual.

In hog raising a good beginning is being made. The lower Yakima Valley will soon become famous for its Durocs, the Palouse and other highland districts for Berkshires, and still other localities for the Poland Chinas and the blood strains are all of highest ideal type.

In the matter of horse breeding there is great room for improvement. Obviously the demand in this new

country for horses has not been strong enough to center any great effort on fixed types, but Prof. Hyslop suggested that now is a good time to begin, for it will take at least ten years before any marked progress, sufficient to attract buyers from distant markets, will have been attained.

In closing his address Prof. Hyslop stated that the college had under consideration a plan for the purchase and establishment of foundation herds to be placed in each of different communities. At the close of the meeting the members present informally expressed their approval of community breeding in any line of pure bred stock but did not favor any attempt by the State College of en-

gaging in business. They were inclined to the view that the stock-breeders will do the buying and selling, that the function of the College is instruction a sort of clearing house for information and that it should assist in creating organizations for the various industrial enterprises that may serve for the best interests of the farmers. But unless its hands are kept off of business enterprises the result will be an equivalent of using the funds of the state for the benefit of one party or community while discriminating against another. This principle applies whether it is in the breeding of live stock, the production of seeds, or publicly as a business, was the general opinion.



Willowmoor Farm scene at Redmond, Washington, home of the world famed Ayrshires, the property of Mr. J. W. Clise, of Seattle.

On this noted farm is the only place in the world where two unrelated strains of the highest producers of the Ayrshire breed are kept, thus insuring progeny of unrivaled excellence. The entire herd is of the true Ayrshire type.

It was started eleven years ago with four cows and a bull, and while further additions were made by importing, it now numbers about three hundred head. The heaviest producers have been developed from this original purchase.

The cow, Lily of Willowmoor, is now in her fifth milking period and will finish with an official record for the five years of about 80,000 pounds of milk, averaging above 4 per cent. butter fat.

This farm is a model in many respects, having conducted successful experiments with feed crops, silos and equipment for profitable dairy work, serving as a means of instruction to visitors who are interested in dairying. The proprietor and his manager consider the promotion of the dairy industry privileged service.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

Address all Communications to the  
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Building, Tacoma, Wash.

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Six Months, 30c. Three Months, 20c  
in Advance.

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S. B. Nelson, Veterinarian.

The Panama Pacific Industrial Ex-  
position opens February 20th. The  
grounds are adorned with beautiful  
trees and plants. The floral display  
throughout the season and the horti-  
cultural arrangement will be leading  
features of attraction. This exposition  
will afford great opportunities for ob-  
servation and study.

## PRODUCERS' ORGANIZATIONS.

Organization among growers or pro-  
ducers, themselves, is the watchword  
at the present time in the Northwest-  
ern states. It is the psychological  
year to standardize both methods and  
products because the need is being  
deeply felt. Unsatisfactory marketing  
conditions affords good and sufficient  
reasons why commercial fruit growers  
are putting their tonnage in position  
to be controlled by themselves. The  
plan of organization is by means of a  
central board of control which will  
hold contracts of individual growers  
or producers' organizations in order  
that the entire product may be mar-  
keted to the best advantage possible,  
including proper distribution, and at  
prices fair and acceptable so far as  
possible to both producers and con-  
sumers.

When markets are over supplied,  
then growers, by means of this organi-  
zation, can place a proportion of the  
crop in storage and by holding ware-  
house receipts arrange to finance such  
members as require advances. The  
plan is not only practical, but it is the  
correct method of procedure for the  
fruit growers of the Northwestern  
states, providing the organization must  
be composed of and controlled by  
growers themselves. The selling  
agencies and the middle men no doubt  
will find plenty of opportunity for good  
service, but they will assume the po-  
sition of servants subject to the direc-  
tion of their principals, the producers,  
better for them as well as for consum-  
ers, because operations will be more  
clearly defined—the margin of profit  
perhaps less, but the expense of han-  
dling will also be less than under  
present unsatisfactory methods. The  
principal of handling produce by  
means of a central board of control  
is equally applicable to poultry-raisers  
and to dairymen. The so-called coun-

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

try creameries will do well to organ-  
ize, fix a high standard of quality, or,  
in other words, standardize their prod-  
uct, then assume the prerogative of  
helping to fix the market price. When  
the market is unsatisfactory they can  
store and realize what money is need-  
ed on warehouse receipts.

Organizations by producers them-  
selves will serve for more dependable  
markets, with some degree of satis-  
faction to all concerned about their  
products, and it is well to proceed  
now to establish them.

## CREDIT EXTENSION.

The Committee on Credit Exten-  
sion for Washington State Dairymen's  
Association submitted the following  
report at the recent annual meeting:

In the matter of credit extension  
as applicable to the development of  
the dairy industry in this state at  
the present time, we find that both  
those who can supply the means for  
credit and those who will use it are,  
to ascertain extent, doing so in a  
practical way and others are nearly  
ready to proceed. In broad terms,  
the question of credit extension is  
dependent on education, and the  
method or condition of its appli-  
cation is largely a local problem.

The basic principle by which the  
lender can freely extend and the  
recipient safely accept credit, is on  
condition that the purpose for which  
the borrowed money is to be used  
will produce a return greater than  
needed to pay the debt. First, the  
borrower must have determination  
to make good, possess strength, en-  
ergy, industry, sobriety, and must  
positively know something of the dis-  
tinguishing line between failure and  
success. To specify—he should be  
sure of the adaptability of location  
for his plan and purpose. He will  
ascertain as soon and as definitely  
as possible what each individual cow  
is doing, and on that basis buy, sell  
or otherwise improve. He will ob-  
tain or employ the use of a sire which  
is sure to improve his future herd.  
The feed problem will be solved on  
the basis of lowest cost for a given  
production. His stables will be ar-  
ranged for cleanliness, health of the  
animals, and for minimized labor, so  
far as practicable. He will aim for  
a high quality product, and dispose  
of it to the best possible advantage,  
arranging for a dependable market.  
In short, a safe credit risk is the  
honest person who has been edu-  
cated by the influences of our College  
instructors, by practical dairymen  
such as may be found among the  
members of this Association.

On the other hand, many of those  
in possession of the means for  
credit extension are too much ab-  
sorbed in other projects to post them-  
selves concerning what the dairy  
industry may mean to them, for  
credit extension investments. Several  
of the Commercial Clubs, Chambers  
of Commerce, and certain bankers  
have expressed a desire to support  
a more rapid development of the  
dairy industry, but being located in  
the larger cities, are unfamiliar with  
the local conditions and needs of the  
dairymen at greater or less distance  
in the country.

There is an average value of the  
educating influence carried on among  
dairymen up to the present time,  
which under proper conditions is  
ready to be capitalized. Those in  
charge of extension work might serve



H. C. Davis, Granger, Wash.,  
President Washington State  
Dairymen's Association.



E. B. Marks,  
Proprietor Holstein Home,  
North Yakima.

These men jointly paid \$10,000 for a Holstein bull purchased from the  
Monroe Company, Spokane. They are aiming for herds of very high average  
production.

to advantage in certain localities by  
reporting to local bankers or finan-  
ciers the condition of certain appli-  
cants or groups of applicants for  
credit, rather than devote so much  
of their time to methods of pro-  
cedure in dairy routine. The local  
banks will then be in position to  
command more attention from the  
central banks.

In his last report, the Secretary  
of Agriculture, David F. Houston,  
states: "There seems to be no  
emergency which requires or justi-  
fies Government assistance to the  
farmers directly through the use of  
the Government's cash or the Govern-  
ment's credit. The American farmer  
is sturdy, independent, and self-re-  
liant. He is not in the condition of  
serfdom or semi-serfdom in which  
were some of the European peoples,  
for whom government aid was ex-  
tended in some form or other during  
the last century. It is the judg-  
ment of the best students of eco-  
nomic conditions here that there is  
needed to supplement existing agen-  
cies a proper land-mortgage banking  
system operating through private  
funds, just as other banking insti-  
tutions operate, and this judgment  
is shared by the leader of eco-  
nomic thought abroad."

The Secretary then points out that  
the Federal reserve act makes paper  
arising out of agricultural trans-  
actions eligible for discount under  
a longer maturing period than other  
forms of paper, and also permits  
national banks not situated in cen-  
tral reserve cities to lend on im-  
proved and unencumbered farm lands  
for a period up to five years.

In this connection, your committee  
would recommend that the State  
bear half the expense of conducting  
cow testing associations, for the  
purpose of weeding out unprofitable cows  
in cases where the unit comprises  
not less than six hundred cows, and  
the applicants for such aid agree to  
use Registered sires of their chosen  
breed, in their further breeding of  
dairy cattle.

## PRUNING TREES

There is a wide difference of opin-  
ion regarding the practice of prun-  
ing trees, but the most successful  
fruit growers usually prune their  
trees. The principal objects may be

summed up briefly as follows:

1. To modify the vigor of the tree.
2. To keep the tree shapely and  
within bounds.
3. To make the tree stocky.
4. To open the tree top to admit  
air and sunshine.
5. To reduce the struggle for exist-  
ence in the tree top.
6. To remove dead or interfering  
branches.
7. To aid in stimulating the devel-  
opment of fruit buds.
8. To thin the fruit.
9. To make thorough spraying pos-  
sible.

## SANITARY DAIRYING

The agitation for good health of  
dairy animals and cleanliness in  
handling the dairy products has been  
kept up until now extreme measures  
are threatening to place unnecessary  
burden upon dairymen.

The City Council of Tacoma has  
gone so far as to pass an ordinance  
requiring all milk sold within the  
city limits to be from cows tuberculin  
tested. Some of the owners of pure  
bred dairy cows of robust health re-  
fuse to inject tuberculin into their  
stock and having no alternative, with-  
drew from the milk supply business  
to the loss of both consumer and  
producer. In most cities where this  
health test is required there is the  
alternative to pasteurize. But the es-  
sential is to safeguard the milk sup-  
ply to the extent of securing it from  
healthy cows and handled in a sani-  
tary condition.

Some years ago the Danes and the  
Hollanders passed through the same  
sentimental period of extreme radical  
measures but they found it imprac-  
tical and unnecessary. There is now  
close supervision by inspectors who  
are posted in veterinary science and  
when an animal or herd is suspected,  
then the test is applied and isolation  
is the order if deemed necessary.

The dairymen and the governments  
of these countries are unitedly mak-  
ing all efforts to have put into prac-  
tice approved systems for health and  
sanitation brought about more large-  
ly by means of education. Compul-  
sory test by tuberculin except in  
suspected cases is said to be anti-  
quated with them.



Shall we in this country give more attention to instruction even on the individual dairy farms and spend less money for the kind of inspection which is becoming such a burden that some of the best dairymen are disposing of their herds? We need to produce healthful cows and pure milk but that can best be attained by common sense methods without the need of going to extremes in the attempt to secure sanitary dairying.

### SELLING STATE LANDS

Governor Lister has expressed the opinion that considerable portions of the lands in the coast section owned by the state should be offered to settlers on very long terms of payment, 20 years if necessary at a low rate of interest with deferred payment on the principal for the first five years. The land of course should be classified. Some of it is only fit for reforestation. Other parts are only fit for pasture and might not be worth more than \$5 per acre, while some of it is valley land with rich soil and might be worth \$15 to \$20 per acre. The idea is for the state to become a leader in affording opportunities for home making on the logged off lands. The situation is similar in some respects to that of the irrigated lands owned by the government.

The cost of clearing is equivalent to the cost of making ditches and leveling but settlers on the coast section lands are nearer the seaport markets.

Dairying stock and poultry raising are becoming the leading features of industry for the rural people in Western Washington. Thousands of acres now untaxed should be offered to home makers practically on their own terms. If speculators endeavor to profit by holding unoccupied lands at prohibitive prices the remedy is to tax their stumps.

### LEGAL BARREL.

Congress has fixed the legal standard size of the barrel for fruits, vegetables and other orchard and garden products except cranberries, at 7,056 cubic inches which is equal to three "heaping" bushels. The law goes into effect in July, 1915.

### LONG TERM FARM MORTGAGE.

On the subject of long term mortgages, Senator Thomas P. Gore, of the Committee on Agriculture and Forestry, writes:

"Farm mortgages in the United States aggregate more than two billion dollars today. The average rate of interest is comparatively high. The farmers' demand for capital on long terms at low rates of interest is continuous and persistent. He needs money to purchase or complete the purchase of his home and to improve his homestead when purchased. He needs a system of credits not primarily to enable him to get into debt but to enable him to get out of debt.

"There are millions of money in this country seeking long time investments with safe and stable security and willing to accept low rates of interest. Now what we need is a system of rural credits that will bring these two factors together, that will bring the farmer seeking long time loans at low rates into contact with the investor seeking long time investment and willing to accept a low

rate of interest. Such a system would serve the interest of both, would sacrifice the interest of none. By stimulating the progress and prosperity of the farmer it would insure and promote general progress and prosperity."

### SULPHUR FOR POWDERY SCAB.

Growers of Seed Potatoes urged to Use This Treatment in Addition to Formaldehyde.

On account of the possibility of infection with powdery scab, the United States Department of Agriculture is now recommending all potatoes growers to treat their seed potatoes with sulphur. This is made expedient by the fact that infected seed potatoes have been shipped out of Maine where powdery scab now exists. Recent tests justify the Department's scientists in recommending a thorough dusting with flowers of sulphur after the potatoes have been cut, as a pre-caution against the disease, but the treatment is by no means intended to take the place of formaldehyde as a general disinfectant. The Department advises the use of both formaldehyde and sulphur.

Before cutting, the potatoes should be soaked for two hours in a solution of one pint of formaldehyde to thirty gallons of water. They should then be allowed to dry quickly either in the open or while spread out on a clean floor. This is known to be effective against common scab and black-leg, and should therefore be employed in all cases. Whether it is equally effective against powdery scab is doubtful and for this reason the use of sulphur is strongly advised in addition. The potatoes should be cut first and then dusted thoroughly with flowers of sulphur.

### HOW TO PREPARE A HOTBED

Collect unheated manure from the horse barns and mix with the pure manure an equal amount of straw that has been used for bedding. Fork this over well and pile in a heap and let stand for about two days. If it does not start to heat in this time moisten the entire pile with warm water.

Prepare a pit for the manure bed. This should be located on the south side of buildings with a good exposure to the sun. The pit should be about two feet deep, not over six feet wide and as long as desired. It is preferable to have the long measure east and west. As soon as the manure has started to heat well, it should be placed in the pit and carefully tramped. This is the best method of packing the manure evenly in all parts of the bed. If it seems dry add enough water to dampen, but do not apply enough to saturate the bed. Let the bed stand until it is heating well throughout, then cover with five or six inches of good garden loam. Let this stand for three or four days and then work down the surface with a rake and the bed is ready for seeding.

A board frame, 10 or 12 inches high on the south and double that on the north, should be placed about the bed when the pit is prepared. The glass sash or cloth covering used should be placed on as soon as the manure is packed in.

A bed prepared in this way will furnish heat about six weeks. The temperature will run high at the start

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and gradually go down. At the end of six weeks the hot bed becomes a cold frame and will protect plants from frosts but not hard freezes.

O. M. MORRIS,  
Horticulturist.

### SPRAYS FOR SPRING USE

#### Sulphur-Lime

Sulphur ..... 1 lb.  
Fresh stone lime ..... ½ lb.  
Water ..... ½ gal.

Slake the lime in the cooker. Add the sulphur and the water. Boil briskly till the sulphur is dissolved (about 45 minutes), stirring continuously and keeping the cooker covered. As it boils down keep adding water. When finished let settle. Use only the clear liquid, which may be stored if kept from the air. Prepared in this way sulphur-lime should have a hydrometer reading of about 26 degrees, somewhat weaker than the factory made product. Dilute with 10 to 12 parts water for all use about March 1, before buds swell for, Oyster shell, scale, San Jose scale, Woolly Aphis, Green Aphis eggs, Moss or Lichens, Apple Scab and Pear Scab.

#### Oil Spray

Crude oil emulsion for winter spraying:

Fish-oil soap ..... 10 lbs.  
(Dissolved in 10 gal. hot water.)  
Lye ..... 2 lbs.  
(Dissolved in 1 gal. water.)

Mix, add water to make 88 gal., run agitator at full speed, and add 10 gal. crude oil (not fuel oil).

When emulsified do not add anything else to the spray-liquid, or free oil will separate. Write for Bulletin No. 64.

#### Tobacco

Blackleaf 40 ..... 12½ lbs.  
Fish-oil soap ..... 35 lbs.  
Water ..... 1000 gal.  
Dissolve the soap in hot water. Blackleaf (old style) in one-tenth as strong.

For orchard mites or scab add 36 gallons of 32 degree sulphur-lime.

#### Bordeaux

Bluestone, 6 lbs.; Good lime, 4 lbs.; water, 50 gals. Dissolve the bluestone by suspending it in a sack in 25 gallons of water in a barrel. Slake the lime in another vessel adding a little water slowly, and dilute to 25 gallons. Mix the two thoroughly. Even the best Bordeaux may scorch in rainy weather.

May be used for scab instead of the lime-sulphur.

#### General Sparying Program.

1. When buds begin to swell, oil spray or sulphur-lime (3°) for scales, insects and fungi.
2. When new foliage is first appearing, tobacco for aphids, orchard mites, thrips, leaf-hoppers, with arsenate added for budworm and twig-borer.
3. When flower clusters are ready to open, sulphur-lime (1.5°) for apple and pear scab with tobacco added for orchard mites, thrips, and aphids.
4. When last petals are falling, arsenate of lead, 1 lb. to 50 gal for codling moth.

### PROPOSED HORTICULTURAL LAW.

The proposed horticultural bill before the Washington Legislature is designed to give horticultural authorities better control of inspection, but it provides for incumbrances of details which ought to come under rules and regulations rather than enacted into law for the exceptions are so many that it would be very difficult to enforce the measure.

Fruit growers and nurserymen unanimously desire a law rigid and practicable in inspection, but proficient also in the matter of standardization, and this can best be attained by the enactment of a law as nearly uniform as possible with those of other Pacific Coast states.

## AGRICULTURE

## The Basis of Prosperity

### Logged Land Problem

By C. J. Zintheo, Agricultural Engineer, Seattle.

There are over two million acres of logged-off land in Western Washington, of which 5 per cent. is under cultivation, 15 per cent. is first class agricultural land but not cleared, 45 per cent. could be made available for agriculture if it were cleared, and the balance is only suitable for reforestation.

The area of logged-off land is constantly added to very much faster than land is being cleared, and most of the land will never be cleared until

we make the stumps pay the cost of clearing.

Stumps are worth money, I am prepared to prove, after five years of experimentation and at a cost of about \$20,000, and the stumps can be made to produce not only enough to pay the price of clearing the land, but a profit besides.

About 80 per cent. of the stumps on Washington logged-off land are fir stumps, and there is an average of 50 cords of fir stumps per acre.

#### Wood Distillation Not New.

In my experience as agricultural en-



gineer with the U. S. Government, I had occasion to investigate conditions in Michigan, Pennsylvania and the South, where there are over 100 wood distilling plants in successful operation. The plants in Michigan use hardwood stumps and refuse, and obtain charcoal pyroligneous acid, wood alcohol and tar. Those in the South obtain turpentine, charcoal and acid. The plants there are stationary and the wood is hauled to the distilling plants either by wagon or by rail. I found after investigating Washington conditions that the products obtained from Douglas fir are different from those of both Michigan and the South.

I also learned that the best plant here is a portable retort which can be moved in the field of stumps as the size of them make them too unwieldy to transport either by wagon or by railroad cars.

#### Two Methods of Distillation.

There are two distinct methods of wood distillation, viz.: the steam and the dry distillation.

In steam distillation the wood is chopped up fine and superheated steam is passed through it in the steel retort which drives out the lighter oils and the acids, after which it is subjected to direct heat, which drives out the higher temperature oils and reduces the wood to charcoal.

The dry distillation subjects the wood to dry heat in which the temperature is increased as the distillation progresses until all the oils and acids have been driven off and the charcoal remains. This is the most practical method and is the only one adapted to the distillation of fir stumps.

#### Products Obtained.

By this method the following yields of products were obtained from an average cord of fir stump wood weighing about 4000 lbs.:

Thirty gallons of oils, 60 to 120 gallons of acids; 50 bushels of charcoal, and about 15 per cent. of the weight of the wood produced as a non-condensable gas.

After constructing a two-cord retort and experimenting with it to find the best method of extracting them, we found that in the condition as they came from the retort they were not marketable, it being a new industry on this Coast.

We then had to construct refineries to separate the oils. The 30 gallons of oils from a cord of fir stumps yielded about 3 gallons of wood turpentine, 6 gallons of fir oil, 8 gallons of wood creosote, the balance being "Stockholm" tar.

The pyroligneous acid yielded per cord about 5 gallons of wood alcohol, 10 gallons of acetic acid, some acetate, acetone and the balance water which was in the wood.

The charcoal was analyzed and found to be 95 per cent. pure carbon, equal to the best hardwood charcoals. The non-condensable gas was piped to the furnace, where it gave an intense heat, but it could have been used for light, heat or to run a gas engine.

#### Markets.

For the wood turpentine there is a ready market in the paint industry. The fir oil can be used for medicinal preparations, but we used it in connection with the wood creosote and made very superior fir oil shingle stains. The "Stockholm" tar has various uses, and these oils can also be

used in the manufacture of numerous outside preservative paints.

Wood alcohol is a staple product on the market. The acid in Eastern plants has been made into acetate of lime and shipped to Germany in large quantities for further refining.

The charcoal was sold on local market, and some was sold to the U. S. Government at 28 cents per bushel. Some was ground up and sold as poultry food, of which the Pacific Coast ships annually about 300 carloads from the East.

In the grinding and sifting of the charcoal we obtained a charcoal dust which we mixed with potassium chlorate and made our own blasting powder for blowing up the stumps, and this can be made very cheaply.

We also discovered a method of mixing ground charcoal with cement and made what is called charcrete. This is like concrete in that it is fire-proof and indestructible. It differs from concrete in that it is very light in weight, is flexible within certain limits and a nail can be driven into it like wood. It is suitable in many ways as building material, and with it cheap fire-proof homes can be built. It is also suitable for railroad ties, mine props, telephone and lamp posts. Some of the cluster light posts on the University of Washington campus are made out of charcrete.

#### Solution of the Problem.

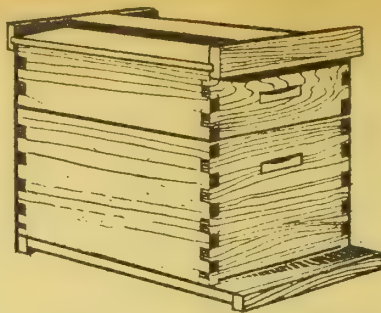
This then indicates a solution of our logged-off land problem. The raw products of fir stumps as they come from the retorts are worth from \$5 to \$10 per cord. It costs not to exceed \$5 per cord to get the stumps out of the ground, reduce them to proper size, distill them in the retort and prepare the land for agriculture. The land should be worth at least a hundred dollars more per acre after it is cleared than before, and it has cost nothing to clear it. Three years ago we had Eastern capital interested in the project to the extent of half a million dollars to prove out the proposition on a large scale. Our plan was to buy large tracts of logged-off land for cash from the lumber companies, construct portable retorts, clear from 10 to 20 acres in one setting as far as the cables would reach, and run the stumps through the retorts.

Take the products obtained to stationary factories and refine them and manufacture them into saleable articles. Move the retorts as the land is cleared.

After the land is plowed, subdivide it into 20 to 40-acre tracts, put up the buildings and sell ready made farms to actual settlers on long-time payments. Give the settlers employment in these various industries where their labor helps pay for the land.

This would help solve the problem of the unemployed, give the poor man a chance to get back to the soil and earn a home for himself. As the land would not be turned over to him till it is under cultivation he should have no trouble making a living.

The company furnishing the capital would earn a profit from the stumps and another profit from the increased value of the land as well as from the industries. It would be the means of converting our waste products into marketable articles that could be sold in all parts of the world, bringing money here. At the same time the logged-off land would be put in shape to raise food products now shipped in.



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Every hive is made of air-seasoned and kiln-dried Washington Cedar, free of knots, and with perfectly cut tight-fitting joints. The production of large quantities in our well equipped plant enables us to sell Washington Cedar dove-tailed Hives at lower prices than other hives of similar quality.

A complete price list of these Cedar Hives, and of Bee Supplies will be sent you on request.

## Brew Manufacturing Company

Puyallup, Wash.

#### THE "K" STUMP PULLER.

The "K" Hand Power Stump Puller, introduced by Walter J. Fitzpatrick, of Seattle, is a small, compact and powerful Krupp steel device weighing 171 pounds.

This outfit requires no horses, powder or power of any kind except the weight of a man on the lever. It is so easily operated that women as well as men have used these machines with surprisingly satisfactory results.

Its light weight permits of easy transportation in thick woods where a horse machine on account of its excessive weight could not be taken, and as the "K" works on its own cable, whether the land is wet or dry, side hill or flat, in the jungle or on the plain, makes no difference. It requires only enough room for a man to stand upright, and only 100 pounds weight on the five-foot lever to develop 48 tons pull, using two blocks.

This device, inexpensive in itself, seems the solution of the high cost of land clearing, for the man of small capital, and as it becomes more generally known throughout this part of the country should do a great deal towards making logged-off lands productive.

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every phase of the problem has been tried out and it is the only practical method of solving the logged-off land problem.

#### Capital Needed.

Unfortunately it takes big capital to carry out the various steps. When the Eastern capitalists had been persuaded to go into this enterprise, financial conditions of the country became such that capital could not be obtained for any Western enterprise.

The large local lumber concerns, who are the very ones that should take hold of these enterprises, are not conversant enough technically to comprehend the various chemical and engineering features of the problem, and hence are not putting up money for new enterprises, especially since their lumber business has been demoralized.

No doubt in two years financial conditions will be such that capital can be obtained so that the enterprise would be self-sustaining.

#### POTATO GROWING.

With skyward prices for wheat and other cereals a larger amount of potatoes will be consumed the next year or two than for a like period during the past, provided the kinds and quality of potatoes which are palatable and digestible are put on the market. Good potato growing like good bread making has almost become a lost art. The trouble, no doubt, is as much in the method of culture as in soil or any other cause. Too many growers do not prepare the soil properly beforehand, the planting is faulty and the tubers do not ripen up sufficiently. Consumers find a large per cent soggy when cooked and not relished nor nourishing.

#### Boy Prize Potato Grower.

The U. S. Department of Agriculture describes the method employed by Howard Dalton, Willard City, Utah, for growing prize potatoes, as an example for general satisfaction. For this demonstration he was awarded an educational trip to the Panama-Pacific Exposition. In his own words his experience is given for the benefit of others in the Northwest:

"In the early spring of 1914 I bought my seed potatoes at Burley, Idaho. I purchased the Idaho Rural potatoes. They were not especially selected seed, therefore I was very careful in preparing the seed for planting. I was anxious that every seed piece had one or two perfect eyes on it. I then treated the seed with a formaldehyde solution (one pint to 30 gallons water). This treatment consisted in soaking the seed (before cutting) for two hours in the prescribed solution. The purpose of the treatment was to kill any scab germs appearing on the surface of the potatoes. Other than this there was no treatment given.

"From March 20 to March 30 I prepared my land. I covered the ground with barnyard manure using 8 tons of wet manure to the half acre. I plowed the land 12 inches deep, using four horses for the work; I immediately followed the plow with a spring tooth harrow. I harrowed it three different times. I did the plowing in the forenoon and followed with the harrow in the afternoon. I did this to conserve the moisture and mellow the soil. After harrowing I pulverized the clods by dragging up the soil with a square framed timber. I tried in every way to be particular about every phase of cultivation as I figured that the secret of my success was good cultivation.

"Five days later, on April 5, I again went over the land with a spring tooth harrow. The following week I again went over it with a spiked tooth harrow which kept the soil moist and mellow. Just before planting I went over it again with the square timber in order to make it perfectly level. On April 18 I planted the seed in plowed furrows 4 inches deep and the rows 30 inches apart, the seed being dropped about 12

inches apart in the rows. The seed was then covered about 4 inches deep with a small hand plow. As soon as the little plants appeared above the ground I began my work on the field. I at once freed the field of weeds by giving it a thorough harrowing with a spiked tooth harrow. This I did May 5, and repeated the same treatment on May 12. On May 26 I used the hand cultivator drawn by one horse, giving them a thorough cultivation with this implement, after which I cultivated them once with the hand hoe, cleaning out all of the weeds.

"Up to June 15 the plants had grown rapidly and gave a strong vigorous appearance. Soon after this date they began to blossom and on June 25 I gave them the first application of irrigation water. I irrigated them on July 5 and again on July 20. The crop was matured with but these three applications of water. After the second irrigation the vines were so large that I could not work in them without destroying them. The operation practically ceased from this time on until the tubers were ripe and ready for digging. On October 13, 14 and 15 I harvested 360 bushels of marketable potatoes, the equivalent of 720 bushels per acre.

"The following table will give the itemized cost of production with the net profits per half acre:

|                           |          |
|---------------------------|----------|
| Value of crop .....       | \$187.77 |
| Cost—                     |          |
| Value of manure .....     | \$ 2.00  |
| Spreading manure .....    | 4.00     |
| Plowing .....             | 1.00     |
| Harrowing six times ..    | 1.50     |
| Leveling .....            | 1.00     |
| Cost of seed, 450 lbs. .. | 5.20     |
| Planting seed .....       | 2.00     |
| Cultivating two times ..  | 1.00     |
| Irrigating three times .. | 1.50     |
| Weeding once .....        | 1.50     |
| Harvesting .....          | 18.00    |
| Rent on land .....        | 8.00     |
| Total cost .....          | 46.70    |
| Profit on half acre ...   | \$141.07 |

#### FETERITA.

Feterita has been tried out in Eastern Washington to a limited extent on the arid upland soils and the reports given indicate it is a good prospective forage crop for such localities.

It was first introduced into the United States from the Sudan, where it is commonly grown under the name of feteria. It is of the non-saccharine sorghum family, having stalks from 5 to 12 feet high, which are semi-juicy and slightly sweet before ripening. It resembles milo maize in habit except that the heads are larger, uniformly erect, and the seeds larger, softer and white in color. Its ability to resist drouth or excessive wet weather makes it a dependable crop from which excellent returns can be expected.

Planting should be done from May 1 to June 1, but a successful stand can be secured even though the seed is not planted until June 15. Its earliness, for feteria matures from two to four weeks sooner than kafir, adds to its value in assuring more crops in seasonable years. Cultivation and harvesting are similar to that of milo, but the grain crop can be more easily gathered because the heads are uniformly erect. It requires about six pounds of good seed to plant an acre.

The Southland Farmer states that it has been proved and demonstrated that the feterita yield is five times that of wheat and considerably more than corn, and enormous crops have been reported from a number of average farms. Its feeding value is equal to that of milo, and hogs and cattle thrive and fatten on it. For use as



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*C. F. Lansing, Prop. Salem, Ore.*

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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silage it will be found superior to sorghum.

#### SEEDS WANTED.

Those who have good seed of any forage or garden crops for sale will do well to write us at once stating quantity and as full particulars about the quality as possible. If lots are sufficient to wholesale we can put you in touch with some good seed houses and if only a small quantity is offered buyers may be found through our advertising columns at a nominal cost. The demand for good seed corn, vetch, clover, alfalfa, kale, peas and good seed potatoes is much greater than usual this year, as many farmers are preparing to grow a larger amount of their feed crops.

#### ELECTRIC LIGHT EQUIPMENT.

Fred Leckenby, Electrical Engineer, Tacoma.

The high cost of an electric plant for farm house and barn lighting and other similar uses has been such an obstacle to their more extended adoption that I wish to offer the following practical information with special reference to the comparative value of the storage battery.

Heretofore no one has even suggested the use of a farm lighting outfit without the use of a storage battery in connection. The real reason for this is not so much because of the slight additional convenience

#### ORNAMENTALS

English Hollies, Laurels, Box and Privet are some of the plants becoming very popular with farmers of the Coast section.



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 Kennewick, Wash.



of having light available after the engine is stopped at bed time, but because there has been no dynamo so constructed that it would give a satisfactory light without flicker when driven by the ordinary gasoline engine. When the storage battery is connected to the system it absorbs the fluctuations and the result is an even light without flicker.

However, because of the apparent necessity of the storage battery, we have heard all about its advantages but nothing whatever of its disadvantages, some of which are as follows:

First—The ordinary small storage battery gives back only about 50 to 75 per cent of the electrical energy that is put into it, therefore the cost for current taken from a storage battery is about twice what it would be from the dynamo direct. As this higher cost keeps up year after year it is most important.

Second—The first cost of the storage battery large enough to be of any practical use, and the cost of the switchboard and other apparatus that is made necessary by the use of the battery, is much greater than the cost of all the balance of the plant.

Third—As the voltage required for charging a battery is about one-third higher than the discharge voltage of same, the lights cannot be used at the same time that the battery is being charged without an excessive voltage at the lamps, which would soon destroy them, or the use of apparatus for reducing the voltage on the light circuit while maintaining it on the battery.

Fourth—While the dynamo requires practically no attention whatever and is usually covered by a liberal guarantee, the storage battery needs considerable care and attention and ordinarily the manufacturers will not guarantee it for even ten minutes.

The use of a properly proportioned and designed fly wheel in connection with dynamo drive can be made to eliminate the flicker in the lights even when driven direct from an ordinary gasoline engine.

The writer does not wish to condemn or disparage the storage battery, but only to point out its limitations and the fact that a very satisfactory light plant can be had without the use of a battery.

After due consideration of the points brought out in the above paragraphs and after much practical experience in the working out of the farm lighting problem, I can make the following suggestions which may be of help in selecting equipment for an electric light outfit.

If it is desired to light barns and buildings separated by a considerable distance from the house and each other and where plenty of light is wanted for the least cost and where it is not considered necessary to have light available at all hours of the night and day, then the proper plant to install is a small distillate engine and a 110-volt dynamo, which make up the complete plant with the exception of wiring and lights. This plant is low in first cost, requiring practically no attention, gives the most lights for the least operating cost and has practically nothing to wear out.

If you must have light available at any time regardless of whether the

engine is running, use a 30-volt dynamo, instead of 110-volt, and a 16-cell storage battery and necessary switchboard. Then, to get the most economical results with this storage battery outfit, start up the engine each night at dark and take the light direct from the dynamo which can at the same time be charging the storage battery. When the work at the bars is finished and only a few lights are needed, then the engine can be stopped by a switch in the house and the lights taken from the battery. Of course, if only a few lights are used it would not be necessary to run the engine every day, but where lots of light is wanted the system and method outlined is by far the most satisfactory and economical.

The problem of electric lights is very simple and the cost for plant and for operation can be brought down to very low figures, but it is necessary to select the right equipment for the conditions. The storage battery serves a good purpose if properly used, but it is the expensive part of the plant and it is not absolutely necessary and is not even desirable except for the additional convenience of having lights available after the engine has been stopped.

#### GOOD ROADS INFORMATION.

Person interested in the good roads problem, either from the engineering or the legislative standpoint, will find the report of the Joint Congressional Committee on Federal Aid to Good Roads a convenient source of information. It not only contains the most extensive data ever published on this subject, but contains a bibliography which gives a list of books, pamphlets, and speeches on all phases of the good roads problem. The report is printed as House Document 1510, Sixty-third Congress, Third Session, and copies may be secured by application to members of Congress.

#### ROADS AND ESTIMATED COST

According to the Office of Information, U. S. Dept of Agriculture, 20 years of experience in modern road building in all parts of this country, engineers classify three types as follows:

First—Gravel and dirt, 20 feet wide, average cost of drainage and grading per mile, \$1817; surfacing, \$2599; total, \$4416.

Second—Ordinary macadam, 15 feet wide, average cost of drainage and grading, \$3400; surfacing, \$5815; total, \$9215.

Third—Bituminous macadam, 15 feet wide, average drainage and grading cost, \$2765; surfacing, \$7533, total, \$10298.

Probably it is safe to say that an average of about 62 per cent of the total cost of a well-built macadam road should be put into the permanent features, and with bituminous-macadam roads, about 56 per cent. This method of estimating cannot be applied to any gravel or natural soil road in which no part of the surfacing can advantageously be considered permanent, for under most systems of maintenance it steadily deteriorates.

Roads built with surfaces entirely of concrete, or with brick pavements resting on a concrete foundation, are generally regarded as

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Varieties complete of APPLES, PEARS, CHERRIES, PLUMS, PRUNES, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

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permanent, but it is not yet definitely known how long the best concrete surface will last. The best vitrified brick surfaces may last a number of years, but even with them repairs will be required.

To sum up, the authors of bulletin No. 136 on "Highway Bonds" points out that the initial cost of a road is never the final one; that no surface is permanent, and that repairs and maintenance charges will always be necessary. On the other hand, many features of a good road are to be regarded as permanent investments. When roads are built with borrowed money, the distinction between the permanent and the temporary improvement must be carefully observed, in order that the county may have something in exchange when the time comes to repay the loan.

### ENSILAGE.

#### Oats-Vetch vs. Corn.

For several years past there has been a strong propaganda for corn ensilage. While not meaning to at all oppose that propaganda, still I wish to call attention to the views advanced by my neighbor, Richard Vail, one of the most successful dairymen of Whatcom county.

Last year Mr. Vail cut 150 tons of oat-vetch ensilage from 7 acres; and thinks it better feed than corn ensilage.

Mr. Vail says that in his neighborhood corn ripens very unevenly; part of the field being ready while the rest is still too green; that many farmers lose corn through frost; that others, fearing frost cut corn too green.

I am not trying to argue the case; but merely calling attention to the fact that when so successful a dairyman as Mr. Vail takes this attitude it will be well for others, having less experience, to try out the corn theory, little by little as the years go by, and not risk too much the first year.

With valleys opening down on the bottom lands, I know of places where the line of danger from frost on one side and freedom from frost on the other is almost as well defined as a river channel. Twenty rods up or down a valley or an elevation of thirty feet may make corn best, while on a neighboring farm oats-vetch is best.

Twenty-one three-sevenths tons of oat-vetch ensilage per acre is good enough until one is pretty sure of a better yield; and it takes nearly everything just right to beat that record with corn.

Corn land must be very rich, frost-free for a good margin each side of planting and cutting, and requires special machinery.

Having come from a corn country, I naturally expect to see corn ensilage become more and more popular—but so long as the oat-vetch crop is practically sure, it is unwise to depend on corn before one has proven his ability to raise corn ensilage on his particular piece of land.

W. H. KAUFMAN,  
Bellingham.

### DRAINAGE AND DEEP PLOWING.

The HORTICULTURIST AND DAIRYMAN is the Farmers' Club.

Here we gather evenings to talk over our plans and problems.

For the past few years we Whatcom County farmers have been studying the problems of drainage and deep plowing.

I will present our problem and hope that some of the wise men at the Puyallup Experiment Station, or farmers in some other county will help us to a solution.

#### Our Dry Summers

So far as farming is concerned some years Western Washington is really a semi-arid region.

Up to the last of May the ground will be soaked with water. Then the dry summer sets in and no rain may fall till the crops have been harvested. The wet spring and early summer makes the roots short (for they never go below the water table.) Then midsummer finds the moisture receding till crops suffer.

#### Our Clay Subsoil.

Here in Whatcom County we have hundreds of thousands of acres of farm lands with a clay subsoil. The same is true of parts of King, Chehalis and other Western Washington counties, although Thurston, Pierce and parts of King have a very sandy subsoil.

Clay holds very little moisture. Drainage must be relatively shallow, probably best at about three feet; while in a more open soil four or even six feet have been tried with excellent results.

#### Soils and Subsoils.

In order to be accurate I will describe my own farm, which is typical of much Whatcom County soil.

The quarter section in which my 100 acres is located is almost as smooth as a floor, but the northeast corner is elevated so that there is a fall to the southwest of about 2 per cent.

Under all this part of Whatcom county is a clay bed of great thickness—30 feet or more.

Over this bed of close, almost waterproof, clay there are deposits of various soils more or less sandy. When rain falls on these sandy surface soils it sinks till it gets to the water-proof clay bed and then runs downhill through the lower strata of the surface soils, making boggy strips which stay wet all through the summers. Sometimes these underground drains end in real springs; but usually they are merely boggy places which cannot be worked till drained. Sometimes these water-bearing surface soils are shallow (two to four feet) and in other places they are twenty to forty feet deep—but everywhere they rest on the water-proof clay beds.

#### A Double Drainage Problem.

Hence we have a double drainage problem:

1st. We have the clay loam, where we must keep drains near enough the surface to get quick action when heavy spring rains endanger growing crops, and;

2nd. We must drain the boggy strips where seepage water comes to the surface.

This second part of the problem is relatively simple, but the first part has us all guessing.

One of my neighbors has a traction engine of 16-horse power—say eight horse power at the draw-bar. I have been trying to persuade him to get a gang of the new disk plows which

# POTASH

is food for thought  
as well as for crops  
this year.

When shipments were interrupted by the war, it was estimated that there was enough Potash on hand in the United States to provide two and three per cent Potash in mixed fertilizers for this spring's trade. Some manufacturers had more than enough for these percentages.

Since then minor sources of Potash have been fully utilized, and additional shipments from the usual source are still being received. The supply is below normal, but this need not prevent farmers securing some Potash in their fertilizers, nor should it lead farmers to decide not to use fertilizers.

There is no reason to return to the out-of-date goods without Potash, although some authorities may try to "wish" them on us. We have not used enough Potash in the past. The largest annual import of Potash was only one-seventieth of the Potash taken from the soil by our 1914 corn crop and only one-fifteenth of the Potash lost every year in drainage water.

Spring crops use from two to ten times as much Potash as Phosphoric Acid. Get as much Potash in the fertilizer as possible. A few firms are offering to furnish from four to ten per cent.

There is no substitute for Potash. It may be harder to get just now, but POTASH PAYS.

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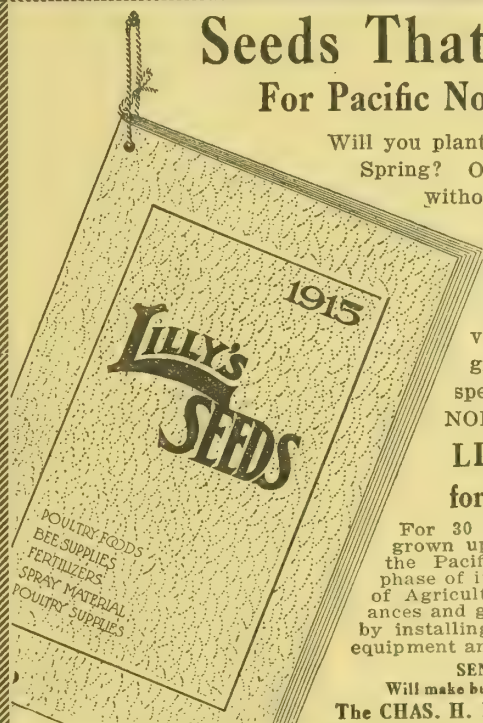
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are guaranteed to plow two feet deep, and still not turn subsoil to the surface. The machine is really two disks, one following the other, each plowing twelve inches, one being really a surface plow and the other a subsoiler. Some of these tools are in use in the Puget Sound country and are giving complete satisfaction.

What we wish to know is whether, if we tile at three feet and then plow two feet deep, our heavy clay soils will "run" when we get heavy winter and spring rains, or will these two feet of loose soil retain the moisture till needed by the growing crops.

In my own mind there is no question at all. But one swallow doesn't make a summer, and one farmer can't afford to invest \$2,000 in a plowing outfit. If Prof. W. A. Linklater of the Puyallup Experiment Station can advise us, or if farmers who have experimented in tiling and deep plowing will, through the Horticulturist and Dairyman let us know the results, we Whatcom county farmers will be greatly obliged.

As abstract questions there is no doubt at all that tiling and deep plowing are good things; but the trouble comes when we get to concrete questions: How deep shall we tile in a close clay? How near must lines of tiling be? What effect will plowing two feet deep have? Will we need to plow so deep oftener than once in four years? If we plow two feet deep, will it be wise to put tiling down four feet, filling in ditch with sand for two feet from bottom up?

#### Cost of Tiling

When ditches were dug by hand the deeper they were the more costly per foot; but with our present ditching machines it costs no more per foot of depth to lay tile four and a half feet than to lay it two and a half feet—we pay so much per foot of depth. As four inch tile costs about 50 cents per rod it is manifest that we should put tile as deep (and as far apart) as we can and still protect ourselves from flooding the ground when we have plowed two feet deep.

Personally, I think of putting down four inch tile, three feet deep, in lines eight rods apart; and then plowing two feet deep.

This will leave only six inches from the bottom of the furrow to the top of the tiles.

If crops do better over the lines of tiling than between, I will know that another line is needed between; making lines of tiling four rods apart.

#### Doubling the Value of Farms.

From results following subsoiling (to a depth of twelve inches) I am confident that drains at the right depth and deep plowing will more than double the value of our farms; for we will at once (1) cut down cost of operation and also (2) increase gross returns.

We will cut down costs, because we can work our ground at any time during the winter. Frost is almost a negligible matter; and with winter plowing there will be no rush of spring work; we will need less teams, less help.

On the other hand our crops will be larger, for the water table will be so far down that roots will go deep enough to assure an abundant supply of moisture even in the driest summer.

Our acid soils will soon become sweet.

As two-thirds of our gross income is needed to pay us for our work, an increase of one-third in the crop yield will double the net returns.

Land is worth \$150 to \$250 per acre. Tiling will cost \$10 to \$40 per acre—and will double the actual net profits of our farms.

When by adopting single tax we rid ourselves of parasitic speculators; and when by drainage and deep tiling we get rid of surplus moisture, we Western Washington farmers will come into our own.

Wet soil in springtime means late seeding and often means losing crops through fall rains.

As the speculator is a mere parasite (he produces nothing at all) whatever speculators get, we producers lose.

By tiling and deep plowing we will get money to fight the speculators who are every year stealing more than \$150,000,000 from the producers of the State of Washington.

W. H. KAUFMAN,  
Bellingham.

#### SEEDS AND EXPERIMENTS.

The State Experiment Station, Pullman, Wash., is sending out a limited amount of seed corn, Bangalia peas and Swedish Select oats in order to further demonstrate the value of these varieties and to encourage more popular plantings. The Bangalia pea was secured from India by the U. S. Government and has out-yielded all other varieties at the State Experiment Station.

Prof. Geo. Severance, who is at the head of the College Agricultural Department, states they are at a loss to know where to refer inquires for the seeds of some of the varieties the station has demonstrated to be most valuable, and recommend that seed houses endeavor to contract with certain farmers for growing dependable quantities and quality to serve for their retail trade.

It would be an excellent thing, writes Prof. Severance, particularly in case of corn, if some of our largest seed dealers could have grown by contract a good supply of the best strains of corn in each of four or five districts in this state. For example, a strain of corn well adapted to the Palouse section is not the best strain for the irrigated lands of the Yakima, Columbia and Snake River valleys. Corn to be best adapted to Western Washington should be grown by some one in that territory and seed corn for the uplands of Eastern Washington should be grown by some one located where climatic and soil conditions are similar to that district. Corn, more than any other cereal is susceptible to any slight change from the conditions where it has become acclimated and it is a hard blow to the progress of the corn industry to have seedsmen sending out seed grown in places entirely different from conditions of the locality to which it is sent. The experiment stations stand ready to co-operate with seed dealers, and planters for their mutual interests and request that those who are concerned keep in close touch with the experimenters on matters within their province.

As to varieties of corn tried out according to Eli Schafer of the State

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H. G. Hunzicker lives at Foster, Wash.

He bought five acres of fir stump land for \$35.00 an acre. With a "K" Hand Power Stump Puller he cleared it for \$28.00 an acre. Then he was offered \$200 an acre for it. Think of a profit of 400 per cent on your land in one year! Men today in various parts of the U. S. are duplicating his experience.

The "K" Hand Power Stump Puller is a machine of tremendous power. It seems hardly possible that a machine weighing only 171 lbs., so simple and compact that one man easily handles it, should be able to pull any stump that one-inch steel cable will hold, absolutely without horses, powder or digging—yet **I POSITIVELY GUARANTEE THE "K" TO DO THIS!**

The "K" is made of forged Krupp steel with case hardened wearing parts. It works at any angle, on any kind of ground. Used by the U. S. Government in Alaska and by several states and counties. **ALTHOUGH I HAVE SOLD HUNDREDS I HAVE NEVER HAD A SINGLE COMPLAINT OR EVEN A REQUEST FOR REPAIRS.**

The "K" is exactly what you need to make your stump land 400 per cent more valuable. 200 ft. weather-proof English steel cable and all equipment included, no extras to buy. You can take it from the depot and be at work in ten minutes.

My new catalog, showing many actual photographs of the "K" at work, with stories of stump pulling and land clearing experiences, is **FREE** for the asking. Write today for it and **SPECIAL DIRECT-TO-YOU OFFER.**

WALTER J. FITZPATRICK  
Box J, 1926 Second Ave., Seattle, Wash.

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This "Iron Age" No. 6 is nine tools in one! It opens its own furrow, sow in rows or drop in hills, covers the seed with loose soil, packs it with the roller and marks the next row, all in one operation. Sows any kind of vegetable or flower seed—-asparagus, beets, cabbage, onions, carrots, cauliflower, cucumber, kale, lettuce, peas, tomatoes, turnips, etc.

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Experiment Station the two varieties, Windus white dent and Thayers yellow dent, have been grown successfully at the State College for a number of years. They have also been grown to a limited extent by a large number of farmers. Most of these farmers, telling of their results, have given favorable reports. Some, however, have given adverse reports. These two varieties of corn are being distributed to determine the various localities in which they are successful. The white corn is larger than the yellow and is suited for a longer season. Where the seasons are likely to be short or unfavorable, the yellow corn is more likely to be successful.

Pride of the North is a popular early dent variety. Corn grown in Minnesota or the Dakotas is more likely to give satisfaction in Washington than is seed received from any of the states farther south. Medium stocks with good sized ears have greater feeding value than have large stocks with small ears.

### VALUE OF PRODUCTS. Of Farms For Family Use.

Investigations by the U. S. Dept. of Agriculture in numerous localities reveals the following estimates:

The average annual value of food, fuel, oil, and shelter per person, for the families visited was \$129.74, of which \$91.97 was furnished directly by the farm and \$37.77 purchased. The average value per family was \$595.08, of which \$421.17 was furnished by the farm and \$173.91 purchased.

The average cost of the food consumed per person was \$89.23. Of this food 63 per cent was furnished by the farm. The total food products consumed annually were distributed as follows: Groceries, 24.8 per cent; animal products, 57.3 per cent; fruits, 6.3 per cent; vegetables, 11.6 per cent. Three-fourths of the food consumed belonged to the general class of farm-furnished products, although only 63 per cent of the food used was actually taken directly from the farm.

The quantity of fruit and vegetables used is in direct proportion to the quantity raised on the farm. It was also found that the grocery bill was reduced where increased quantities of fruit and vegetables were grown for home use.

The average annual value of the use of the farmhouse was found to be \$125 per family. The value of the dwelling is generally considered a part of the value of the farm and is thus furnished free for the use of the farm family. The importance of this is fully appreciated by the family in the town or city paying house rent.

The house labor was performed chiefly by members of the family, only 4 per cent being hired. The average annual value of this labor was \$203 per family.

The average cost of board for each person, that is, the value of the food and its preparation, was \$10 a month. The cost of board and lodging was \$14.62. Of this sum, on the average only 22 per cent was paid out in actual cash by the farmer.

The result of these studies shows that the farmer's cost of living in actual cash expenditures is very materially reduced by what the farm furnishes in food products, fuel, and house rent; in fact, the income from

this source adds as much to the real wealth of many farmers as does the net income from the sale of farm products.

If it were not for those products contributed by the farm without any actual cash expenditure, a great many farmers would not have a comfortable living. Extensive investigations relative to the profits in farming indicate that the average labor income of the farmer probably differs little from ordinary farm wages, but in addition to this, he has the products contributed by the farm, as discussed in this bulletin.

### AGRICULTURIST IN THURSTON COUNTY.

Mr. O. C. Van Houten has been appointed County Agriculturist for Thurston County with headquarters at Olympia. Mr. Van Houten is a graduate of the Agricultural College at Ames, Iowa, with experience in practical dairying and operating creameries. For three years Mr. Van Houten has been Deputy Dairy Commissioner of Washington and is competent to proceed with agricultural agency extension work without any necessity for survey or other primary performances.

### PUBLIC SERVICE BY AUTO TRUCK.

Permanent Highways Imperative.

Successful competition of the commercial auto truck with the steam and electric railroad in the hauling of short distance freight and passenger business, is given as one reason for extensive road improvement, in the report of the Joint Congressional Committee on Federal Aid to Good Roads. Discussing this phase of the subject, Hon. Jonathan Bourne, Jr., chairman of the committee, says:

"A great system of rural transportation would be developed, with rates regulated by actual competition, open to rich and poor alike, as no expensive privately owned terminals, roadbeds, tracks or equipment would be required."



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to cover postage and packing and receive this valuable collection of seeds postpaid, together with my big instructive, beautiful Seed and Plant Book, tells all about Buckbee's "Full of Life" Seeds, Plants, etc.

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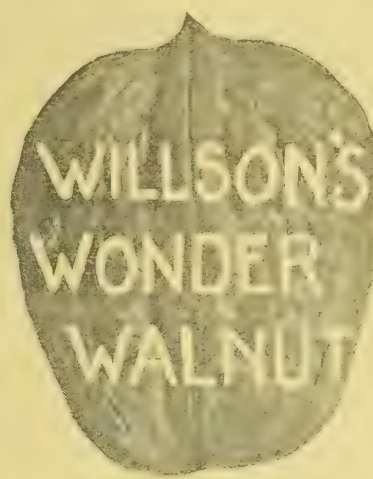
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NATURAL SIZE

## WILLSON'S WONDER THE GREATEST WALNUT IN EXISTENCE

**THE EARLIEST HEAVY BEARER.**—The original tree now 13 years old, has borne 11 successive crops. Trees now 7 years old have borne 7 crops of nuts (8 years from grafting).

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Party who has just ordered more "Willson's Wonder" trees for third orchard, says: "I have yet to find anything wrong with Willson's Wonder walnut. It is a strong grower, an enormous bearer. Nuts are plump and full of the sweetest kernel, no sign of blight."—A. C. W.

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## SOIL FERTILITY

Carbonate of lime is the foundation stone of soil fertility.—All great civilizations of the world have grown up on soils that were alkaline, not acid. Alkaline soils are soils rich in carbonate of lime. Sour soils are those deficient in lime.

The action of carbonate of lime is in three directions. Its presence in the soil causes vegetable matter decaying in the soil to form the soft brown humus or vegetable mould so necessary to highest fertility. With much carbonate of lime, soils become fully charged with humus. Through bacteria carbonate of lime give nitrogen to the soil, thus giving vegetation that dark, rich color of luxuriant growth.—W. H. Heideman, Supt. of Experimental Station, University of Idaho, in Western Farmer, August 15, 1914.

Probably no limestone quarry in America produces a better quality of lime for fertilizer than the Orcas Quarries, on Orcas Island, Washington, where S. W. R. Dally gets the blue crystal limestone, 98% pure lime, from which Dally's Raw-Ground Limestone Fertilizer is made.

A hint to "do it now."

S. W. R. Dally, Globe Bldg., Seattle.

Please send me, without obligations on my part, further information on Raw Ground Limestone and your special car lot prices for February.

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This valley produces most of the seed used on the Coast, and we are in a position to offer at the lowest prices and best grades.

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We carry a complete stock of Farm, Field, Garden Seeds, Flower Seeds, and Seed Grain of all kinds, and are always glad to quote prices at any time. Our Catalogue is now ready; send for it.

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## SEED CORN

2000 lbs. of selected seed corn for sale, of the Yellow Dent early variety; have received first premiums on this corn for the last four years at all of the leading shows of the Northwest.

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## FRUIT GROWERS

Here is your chance to get some very choice trees at rock bottom prices, for we are compelled to remove all our stock from leased ground.

Do you want a bargain on something choice in trees, then send for our list of varieties and prices today.

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We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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ed. The good wagon roads would be open everywhere to the use of everybody, and the equipment, relatively inexpensive, would be within the means of many.

"This suggestion as to the use of rural roads by commercial auto trucks and busses, is not merely a product of imagination. In several instances gasoline propelled busses are now competing successfully with city or interurban electric lines, and, where the haul is but a few miles, transportation of freight by auto truck is found cheaper and more satisfactory than transportation by rail.

"In the case of the short haul, the saving in handling and in time more than counterbalances the lower rail rate. Instead of loading the commodities on a truck, unloading at the local railroad station, where they must be loaded upon the cars, hauled to the near-by city and then unloaded and again loaded upon a truck and hauled to the consignee, the user of an auto truck who has a hard surface road available loads his products once, hauls to the door of his consignee and unloads, saving not only the handling but the time, the inconvenience of issuance of way bills and receipts, and avoids damage to goods or deterioration while in transit.

"We believe that permanent highways will result in very considerable adoption of auto truck hauling in preference to rail transportation, where the distance is within a half day's run."

#### PREPARATION FOR CROP.

By C. J. Zintheo, Agricultural Engineer for John Deere Plow Co., Seattle, Wash.

Plants require a suitable seed bed, the disintegration of the soil particles by proper cultivation in order that the plants roots may be able to absorb the ten ingredients of which all plant foods are composed.

The three most important plant foods are nitrogen, phosphorus and potash. To supply these in abundance requires cultivation and fertilizing of the soil.

Cultivation is also necessary in order to permit pure air to penetrate the soil to oxidize the mineral particles in the soil. It also helps to store moisture in the soil for use during a dry period.

The farmer who does not observe these principles of cultivation and rotation of crops, be it either the dairy farmer with his meadow, or the grain farmer with his wheat field, will soon discover his mistake a diminished yield of grain, grass, or hay.

#### The Plow.

The plow in its various forms of construction has been used since time immemorial to cultivate the soil.

The most modern plow consists of a steel beam with a soft center steel share and moldboard. The share is made of a bow carbon steel on both sides so that when it is tempered the share will be tough against breakage and at the same time hard as glass to withstand wear and to scour perfectly in black and sticky soil. One of these shares will outlast several cast shares and will be lighter draft on the horses.

The moldboard is made in various shapes to meet the requirements of soil, but what is known as the general purpose plow will meet most requirements.

#### Depth of Plowing.

Except in sandy and loose soil it is advisable to plow deep. Deep plowing assists the absorption of water, breaks up the hard pan if one exists, permitting plant roots to penetrate deeper where moisture and plant food exists. In some sections where droughts are apt to prevail, a subsoiler should be used every four or five years.

Virgin land should not be plowed deep, but land that has been cropped, if plowed deep will provide against a drought. It will provide fresh plant food and will increase the yield of crops from 25 to 50 per cent. and many times prevent complete failure. After the ground is plowed it should be disked until the lumps are finely broken and then harrowed with a long tooth harrow until there is a fine mulch from the surface to the bottom of the furrow. If lumps exist, the little hair-like roots will fail to penetrate them in their efforts to gather food. If lumps exist the capillary connection between the surface and the deeper soils is broken, thus preventing moisture to come up from below to the plants' roots.

Prepare the seed bed as the mason mixes his mortar and you will have provided a good home for the plants to develop and make a crop.

#### The Power Tractor.

All this cultivation requires a lot of power. Up to the present time horse power has been used mainly for soil cultivation. Horses, however, are expensive motion power as compared with gasoline power, as the farmer has work for them only certain time of the year, the balance of the time he has to feed them and care for them. The gasoline tractor is gradually coming into use. With it very much more work can be done on the soil than with horses and at a very much lower cost. The great drawback has been that most tractors have been too large and too expensive, for the average farmer and they have not been adaptable to all the work on the farm.

However, small tractors are now being developed which can be used for all purposes of soil cultivation as well as for harvesting the crops, threshing and for all kinds of belt power.

These are economical enough in price so that they do not cost any more than three good horses and with such a tractor and the automobile many a farmer may dispense with his horses entirely.

### Small Fruit Plants

at

### Wholesale Prices

|              |              |
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| Blackberries | Gooseberries |
| Raspberries  | Currants     |
| Loganberries | Dewberries   |
| Strawberries | Rhubarb      |
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Write for prices.

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**HOW TO MAKE MONEY IN CALIFORNIA** on an investment of \$1,000 or less. I will tell you how to double your money yearly. Send 25c for book. ALFRED MITTING, Expert Horticulturist, 8 New St., Santa Cruz, Calif.

## We Couldn't Improve Our Silo— So We Improved the Roof

Scientific construction based upon thorough experience has brought the WEYERHAEUSER SILO to practically a state of perfection. The WEYERHAEUSER SILO has been in use long enough to demonstrate the correctness of its construction. Competent engineers have carefully studied our silo and can suggest no improvements.

But we have improved the roof. We have developed a SIMPLE, EFFICIENT, SELF-ADJUSTING roof which forms a part of the steel anchorage system of all WEYERHAEUSER SILOS this year.

Write for a list of WEYERHAEUSER SILO owners in your vicinity.

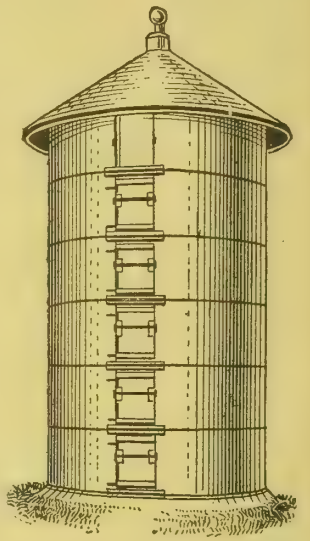


Points in favor of the WEYERHAEUSER SILO:

1. Its air-tight construction means perfect ensilage.
2. Scientifically designed and guaranteed anchorage system.
3. Perfectly balanced, easy-to-swing, air-tight doors.
4. Safety tread ladders.
5. Specially rolled steel hoops, thoroughly tested.
6. Specially designed, SELF-ADJUSTING roof.
7. Staves made from air-dried Douglas fir in the largest silo factory in the Northwest.
8. The guarantee of the largest lumber company in Washington.

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"I pulled stumps with 7 ft. tap roots."—Mr. Shaver, Leavenworth, Wash.  
"The Kirstin has more power than you claim."—Fred Funk, Salem, Ore.  
"We pulled 26-inch live oak stumps."—J. L. Markwell, Lincoln, Cal.  
Our Catalogue and Limited Time Prices sent Free. Write to **A. J. KIRSTIN CO.**  
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Now is the best time to PLANT  
**Rhubarb-Berries** and Small Fruit  
If planted now you should derive good results  
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## IRRIGATION

Adequate, available moisture  
at all seasons.

### WOOD PIPE FOR CONVEYING WATER.

Properly Maintained Fir Or Redwood Pipe Should Last 20 Years If Fully Exposed And Free From Contact With Soil—Many Millions Of Dollars Invested in Wood Pipe Lines In America.

"How long will it last?" is a question asked perhaps more than any other concerning the use of wood pipe for irrigation. That the life of such wood pipe should be at least 20 years if the pipes are fully exposed and supported free from all contact with the soil; if the material is either fir or redwood; and if the pipe has been properly maintained; is the conclusion of a specialist of the U. S. Department of Agriculture in a professional paper on "Wood Pipe For Conveying Water For Irrigation," Bulletin No. 155, had free of charge by applying to the Department of Agriculture, Washington, D. C.

With pipes buried in the ground the wood will endure longest where the air is most nearly excluded either by a high internal pressure which completely saturates it or by a deep covering of very fine soil. In accordance with the foregoing statement, experience shows that in contact with the soil wood pipe decays more rapidly under a light head than it does under heavy pressure, and other things being equal, it usually decays more rapidly in a porous open soil, such as sand or gravel, than it does in a fine soil of silt or clay, because the finer soil is more effective in excluding the air. Experience appears to indicate also that wood decays more rapidly in a loamy soil, rich in humus or partially decayed organic matter, than it does in one containing little or none. This is probably due to the fact that the presence of organic matter affords more favorable conditions for the development of fungus growths and bacteria.

Pipes fully exposed to the atmosphere and free from contact with the soil will, as a rule, be too dry on the exterior to favor the development of fungus spores, and so long as the outside of a pipe remains dry no appreciable decay will occur, even though the internal pressure is very light. Decay of exposed pipes almost invariably starts at the ends of staves, as a result of leaky joints. Where water leaks out and runs down over the outside of the pipe favorable conditions are afforded for the growth of the algae, which usually get a fair start, then mosses may begin to grow in the soil that collects on such spots, and decay spreads to adjoining staves. Bruising the staves in handling or injuring by too tight cinching of bands renders them more susceptible to infection by the spores of wood-decaying fungi, thus hastening decay. The life of exposed pipes may be prolonged by promptly stopping all leaks as they develop and by keeping the exterior dry. The decay of buried pipes has also in some instances been arrested by removing the covering and leaving them exposed.

The asphaltum or tar coating ap-

plied to machine-banded pipe, while intended primarily as a protection against corrosion of the bands, doubtless helps also to some extent in preserving the wood. Until recently the practice has been to leave the ends of wooden sleeve couplings untreated. Those couplings almost invariably decay long before the main pipe. This may indicate that infection by wood-destroying organisms starts principally where the coating is absent, though less perfect saturation of the wood in the sleeves may be the more largely responsible for the early decay, as it may be noted also that decay occurs at summits of pipe lines where air accumulates much sooner than at depressions.

### IRRIGATION FOR CORN.

Water Requirements for Good Crops.

The Nebraska Experiment Station has just issued Bulletin No. 128, on "Studies in Water Requirements of Corn."

Results indicate that the best growth is secured when the soil contains about 60 per cent. of the water it could hold if saturated. Soil that is too wet gives decreased yields. It was also found that the amount of water required from day to day by growing corn varies with weather conditions, and in very much the same way as evaporation from the surface of a tank; also the greater the leaf area the greater the water requirement.

In 1911, corn was grown in two greenhouses, in one of which the air was dry, just as the natural outside air. In the other the air was artificially kept humid. The plant required twice as much water to make a pound of dry weight in the dry greenhouse as it did in the humid greenhouse, indicating that in a dry climate the water requirement for growing crops is very high as compared with a humid climate. It was found that in the year 1911 it took 345 pounds of water to make one pound of dry weight in corn, while in 1910 it took only 250 pounds. This was due to the fact that the air was much drier in 1911. So even with equal rainfall, in certain years the water requirement is very much higher than in others.

Soils of three degrees of fertility were used, and these same soils were each fertilized with sheep manure in a second series. It was found that the more fertile a soil the less water required to produce a pound of dry weight, and that the adding of manure decreases the water requirement except in the most fertile soils. This would indicate that manuring soils low in fertility will give a greater yield for a given quantity of water, but if the soils are sufficiently fertile the addition of manure will probably have little or no effect.

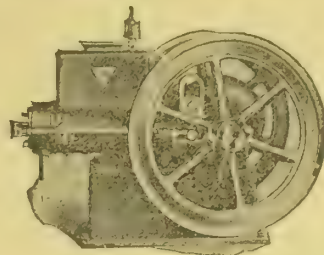
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Director.

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There are two things you should consider carefully in buying an engine for farm use.

RELIABILITY  
and  
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Both depend on design and construction.

SIZES—2 H. P. to 100 H. P.

TYPES—Hopper Cooled. Closed Jacket, Tank or Screen Cooled. Portable or Semi-portable.

FUEL—Gas, Gasoline, Kerosene and Low Grade Distillate.

GOVERNOR—Hit or Miss or Throttling Type.

IGNITION—All ALPHA ENGINES have the new "built-in," gear-driven, gear-timed magneto. Guaranteed for the life of the engine.

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Send for special circular H, that tells

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Everything for the Dairy

has just the right "body"  
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metal surfaces apart—but not  
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Dealers everywhere.

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In Seven  
Sizes

THE LATEST AND BEST MILL ON  
THE MARKET TODAY

Send for Catalog  
Manufactured only by  
**Colfax Iron Works, Inc.**  
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Successors to CARLEY BROTHERS

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Investigate the **SANDOW**  
Kerosene Stationary ENGINE

it runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low fact-re prices based on enormous output—30 day money-back trial—10 years iron clad guarantee. Sizes, 1 1/2 to 15 horsepower. Send a postal today for free catalog which tells how Sandow will be useful to you. No gift coupons. Pocket agents' and millwrights' commissions by dealing direct with factory. (6/22)

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Grafted Trees  
on  
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Two thousand Franquette and Mayette trees in different sizes. Stock and strain of highest quality.

Table Grapes, strong vines, olives, almonds and other stock. Write for list and prices.

TABLE GROVE NURSERIES  
A. J. GALLOWAY, Prop.  
Healdsburg, Calif.

FOR SALE—Acetylene Gas Generator, brand new, only half price, 15-burner capacity. L. E. NEVINS, Sylvan, Wash.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WOODSON

## THE GOSPEL OF LABOR.

Hewing wood and drawing water,  
Splitting stones and cleaving sod—  
All the dusty ranks of labor  
In the regiment of God,  
March together toward His triumph,  
Do the task His hands prepare;  
Honest toil is holy service;  
Faithful work is praise and prayer.

This is the gospel of labor—  
Ring it, ye bells of the kirk—  
The God of love came down from  
above

To live with men who work.  
This is the rose He planted here  
In the thorn cursed soil;  
Heaven is blessed with perfect rest,  
But the blessing of earth is toil.

—Henry Van Dyke.

## LOOK BEYOND.

Is the sky before you threatening?  
Look beyond!  
Back of fearful clouds a'gathering  
Shines the sun.  
Clouds which look so dark and gray  
Will gather soon and roll away  
And then a bright and glorious day  
Is sure to come.

—Albert E. Vassar.

## THE FAMILY VEGETABLE GARDEN.

Many of our readers are making plans for the vegetable and flower garden this month. The catalogs are filled with many helpful suggestions and copies are available from the seed houses, advertising in this paper, for all who apply.

Look carefully over the descriptions for new and well tried varieties of both vegetables and flowers, for every comfortable farmhome will plan to provide a feast for both body and soul. Whether the purse is light or comfortably filled, nature will respond bountifully providing the laws governing crop production are properly observed.

Much will be gained by carefully planning the work ahead. Determine the extent of each of the vegetable and the flower garden, the varieties adapted and desired for growing. Then lay in the supply of seeds, and arrange to have the soil properly conditioned and the work is "half done."

If these needed preparations are neglected beforehand it becomes more difficult to arrange for any measure or satisfaction as the season progresses.

Here are some suggestions:

Asparagus: A bed 15x50 feet containing about 100 plants will furnish an abundant supply for the average family. If you are without this delicious earliest of sprouting vegetables proceed at once to provide a good bed, once in, it is permanent.

Garden Peas: This is one of the most important next to potatoes. There are several new dwarf varieties and others of tall vines, which can be planted in succession. No danger of growing too many peas but be sure to get some well prepared seed in very early.

Next are the onions, turnips, radishes, cauliflower and cabbages, all hardy, and planted according to the wishes and likes of the family. The

tender class, including corn, tomatoes, and beans are usually put in from the middle to the last of May, and these are relished by nearly everybody. A good garden including choice potatoes together with poultry and the cow and the housekeeper of the average family will not be compelled to incur excessive grocery bills. This year with high prices of flour, meats and sugar, a good garden is very essential. Be particular to get good seed potatoes, some early, medium, and late varieties and see that the soil is thoroughly pulverized before planting, then at the proper time give the tuber a chance to ripen up. It is safe to estimate that more than half of the potatoes grown in the Pacific Northwest last year were soggy, and really unfit for human consumption and that is one reason for the low market prices prevailing. In farm-home gardens the quality should be first class, easily attained under proper conditions.

USEFUL ARTS AND CRAFTS.  
Boys and Girls' Clubs.

Mother and teachers who wish to keep the young people cheerfully busy in useful tasks about the home or farm may be interested in a project of the United States Department of Agriculture for organizing farm and home handicraft clubs. Some of the arts and crafts in which the Department's specialist in charge of club work for the Northern and Western States hopes to interest his boys and girls are as follows:

1. Rope tying and splicing.
2. Making seed testers (box, blotter, and rag-doll testers.)
3. Making a hen coop and brooder.
4. Fruit tree grafting and tree surgery.
5. Making a fly trap.
6. Making wood box for kitchen or sitting room.
7. Making a bird house and watering trough.
8. Making a hot bed or cold frame.
9. Making a step ladder or handy ladder for farm and home.
10. Making one dozen vegetable market crates.
11. Sharpening saw, pair of scissors.
12. Making a medicine cabinet.
13. Making and laying a cement walk or floor.
14. Making a bookcase or library file.

## Paint Without Oil

Remarkable Discovery That Cuts  
Down the Cost of Paint Seventy-  
Five Per Cent.

A Free Trial Package is Mailed to Every-  
one Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r., 826 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

Find out how much  
it will cost to build

Here's the kind of saving you can make if you buy from H-L-F. Recent savings are: John Loritz, Hebron, N. Dak., \$280; Matt. Schauf, R. 2, Sparta, Wis., \$200; H. F. Sick, Chappell, Neb., \$204 on an H-L-F silo. Find out the big saving we can make YOU—and do it NOW.

Send carpenter's bill of  
materials to H-L-F

for the H-L-F price. No extras. Grade, quality, complete satisfaction guaranteed; no obligation.

**Write quick for H-L-F House Pricer**  
If you haven't material bill, send for H-L-F House Pricer. Answer few questions, get guaranteed price.

**Save \$100 or more on an H-L-F Silo**  
Double walls. Solid as a rock. Cheapest on the market. 100-ton size, \$174 delivered. Send coupon for folder.

**Good Plans—Send 10c for H-L-F Prize Plan Book, 4c for Barn Builder's Guide.** Get your free copy of H-L-F Millwork Catalog, H-L-F Silo Folder. Write today.

**HEWITT-LEA-FUNK CO.**

793 Crary Bldg., Seattle, Wash.  
Capital \$1,000,000 Not in any trust or combine

**Hewitt-Lea-Funk Co.**  
793 Crary Bldg., Seattle, Wash.

Gentlemen: (Please write plainly)

- Please send me the following—  
( ) Delivered, freight-paid price of enclosed list of materials (no charge for quotation)  
( ) H-L-F House Pricer (free)  
( ) H-L-F Silo Folder ( ) Prize Plan Book (send 10c)  
( ) Barn Builder's Guide (send 4c)  
( ) Millwork Catalog (free) ( ) Plan Sheet (free)  
( ) Information on H-L-F Patented Stud and Wall Board

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Business \_\_\_\_\_ Street or R.F.D. No. \_\_\_\_\_

Post Office \_\_\_\_\_ State \_\_\_\_\_

When are you going to build? \_\_\_\_\_



For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

**MASHELL PAINT CO.**  
TACOMA, WASH.



## \$3000 FOR YOU

That's the money you should get this year. I mean it. I want County Sales Managers quick, men or women who believe in the square deal, who will go into partnership with me. No experience needed. My folding Bath Tub has taken the country by storm. Solves the bathing problem. No plumbing, no water works required. Full length bath in any room. Folds in small roll, handy as an umbrella. I tell you it's great! GREAT! Rivals \$10 bath room. Now listen! I want YOU to handle your county. I'll furnish demonstrating tub on liberal plan. I'm positive—absolutely certain—you can get bigger money in a week with me than you ever made in a month before. I KNOW IT!

**Two Sales a Day—**  
**\$300.00 a Month**

Exclusive Territory.  
100% Profit.

Demonstrating  
Tub  
Furnished

That's what you should get—every month. Needed in every home, badly wanted, eagerly bought. Modern bathing facilities for all the people. Take the orders right and left. Quick sales, immense profits. Look at these men—Smith, Ohio, got 18 orders first week; Meyers, Wis., \$250 profit first month; Newton, California, \$50 in three days. You should do as well. 2 SALES A DAY MEANS \$300 A MONTH. The work is very easy, pleasant, permanent, fascinating. It means a business of your own.

Little capital needed. I grant credit—Help you out—Back you up—Don't doubt—Don't hesitate—Don't hold back—You cannot lose. My other men are building houses, bank accounts, so can you. Act then quick, SEND NO MONEY. Just name on penny post card for free tub offer. Hustle!

2648 Factories Bldg., TOLEDO, OHIO  
H. S. Robinson, Pres., Canadian Branch—Walkerville, Ont.

M. C. TEBBETTS  
Incorporated

Buy your supplies right and you won't need to pay the other fellow's debts. Send for price list.

**GROCERIES — FURNITURE**  
3% freight allowance if you mention this paper.

"A little better than the store you thought was best."

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Tacoma, Wash.

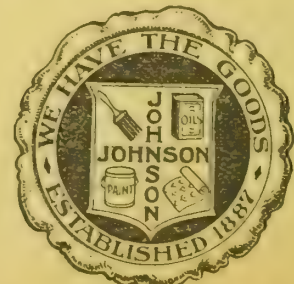
NORTHWEST  
GROCERY CO.

HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

**Northwest Grocery Co.**  
13th and Commerce Sts.,  
Tacoma, Wash.  
Oldest and Largest Mail Order  
House in the State.

## A. S. Johnson &amp; Co.



1142 C Street

Tacoma, Wash.

## Make '30 to '60 Weekly

selling our new unequalled gasoline table and hanging lamp for lighting city and rural homes, stores, halls, churches. Most powerful light known. ABSOLUTELY SAFE.

## WE LOAN YOU SAMPLE

More brilliant and many times cheaper than gas or electricity. Guaranteed five years. Everyone a possible customer. No experience necessary. Exclusive territory free. Write today.

**SUNSHINE SAFETY LAMP CO.**  
321 Factory Bldg., Kansas City, Mo.



## Rhododendrons

Native Shrubs, Plants and Flowers,  
collected from the forest.

Send for Circular.  
**JOEL SHOMAKER**  
Nellita, Washington



## THE FLOWER GARDEN.

A few flowers, shrubs and trees often make the difference between a habitation and a home, and it is surprising how many unattractive habitations there are when so little labor and investment would transform them into real homes.

Many of the annual flowering plants are easily grown from seed, and are among the prettiest and most satisfactory garden flowers. They are especially pleasing when tastefully arranged with regard to color, height and season of blooming, to harmonize with trees, shrubs and perennial plants.

It would be difficult to imagine anything more beautiful than a trellis covered with sweet peas of harmonizing colors, a rookery or terrace draped with nasturtiums, a well placed bed of large white asters against a green background of shrubbery or taller plants, or a few bright colored poppies nestled among the plants and shrubbery of a cozy wild corner. And yet, these beautiful flowers require no more care or attention than the vegetables in your kitchen garden.

## Here Are Some Suggestions for Planting.

Achillea Ptarmica, fl. pl. Double white flowers, borne profusely in summer.

Alyssum Saxatile Compacta. Spring-blooming, hardy Alyssum, yellow.

Aquilegia or Columbine, Large-Flowering Hybrids. Beautiful new colors.

Asters, Hardy, Large-Flowering Hybrids. Improved Michaelmas Daisies.

Canterbury Bells, Calycanthema, Mixed. The "Cup and Saucer" type. Candytuft, Gibraltica. Rose and white hardy Candytuft.

Carnation, Hardy Garden, Mixed Colors. Double fragrant flowers.

Coreopsis Lanceolata, Harvest Moon. Large golden-yellow flowers.

Delphinium, Large Single Hybrids, Mixed Colors. Perennial Larkspurs.

Dianthus Plumarius, Double Mixed. The Pheasant's Eye or Grass Pinks.

Digitalis Gloxinoides, Mixed. The finest strain of Foxglove, various colors.

Gaillardia Grandiflora Maxima, Mixed. Flowers 3 inches across, red, yellow, etc.

Hollyhock, Extra Choice Double, Mixed Colors. Many beautiful colors.

Lobelia, Hardy Hybrids, Mixed. Improved types of the Cardinal Flower.

Phlox, Hardy Large-Flowering Hybrids, Mixed. Heads of large flowers.

Platycodon Mariessi, Mixed Colors. Compact bushes with bell-shaped flowers.

Poppy, Hardy Oriental Hybrids, Mixed. Immense flowers, 4 to 6 inches across.

Pyrethrum, Large-Flowering Hybrids, Mixed. Single Daisy-like flowers.

Scabiosa Caucasicca. Saucer-shaped flowers, 2½ inches across, of lovely light blue.

Stokesia Cyanea. The hardy Cornflower Aster, blue flowers, 4 inches across.

Sweet Rocket, Mixed Colors. Fragrant purple or white flowers, old favorites.

Sweet William, Large-Flowering, Single, Mixed. Rich colors.

Tritoma Uvaria Grandiflora (Red-Hot Poker). Spikes of fire-red flowers.

Wall-Flower, Double Large-Flowering, Mixed Colors. Fragrant flowers.

## Classification and Planting.

Some flower seeds may be simply sown broadcast, and require little further attention, but some are quite difficult to get started, and the person who plants them all in the same manner is liable to disappointment. Cultural directions given in the good catalogs available from seed firms should be followed closely.

Plants are classed as Annuals, Biennials, and Perennials, and these are divided into Hardy, Half-Hardy, and Tender.

Hardy Annuals may be sown outdoors in the fall or early spring, preferably fall. They bloom the following summer, and then die.

Half-Hardy Annuals require an even temperature of at least sixty degrees to germinate the seed, and will not stand frost. For early blooms the plants must be started under glass or in the house, and not planted outdoors until danger of frost is past.

Tender Annuals must be grown in pots in greenhouse or in the house, and exposed outdoors only during the most favorable weather.

Biennials are best sown outdoors in September, and will bloom the following summer, after which they will die. If sown in spring they will not bloom until the next year.

Hardy Perennials seldom bloom the first year, but usually bloom the second and many succeeding years. They may be sown in spring, but are best sown outdoors in September.

Half-Hardy Perennials require some protection during cold winter weather. The seed should be sown in boxes or pots, or outdoors late in spring.

Tender Perennials require protection during the greater part of the year.

should have a hard, non-absorbent floor, without cracks where filth can collect. Dust or cobwebs should not be allowed to accumulate on the walls and ceiling, and it is a good plan to whitewash the walls and ceiling of the stable at least once a year. Manure should be removed at least once



Olympic

WHEAT  
HEARTS

The little hearts of Wheat A tempting breakfast dish, easily cooked. 4 pound cartons. Sold by all Grocers.

The Puget Sound Flouring Mills Co.

Tacoma, Wash.

## Fresh High Grade Cows

We are offering for sale High Grade Cows which are very satisfactory producers at reasonable prices. Some of them are nearly pure of the best in Holstein breeding, some are high grades of other dairy breeds but all of excellent dairy type. We also have a fine bunch of youngsters from which to make selections. For many years we have been supplying dairy cows to condensor patrons.

Write for prices and particulars and submit wants.

J. D. ROSS &amp; SON

Kent, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and younger, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD &amp; SONS

NORTH YAKIMA, WASH.

Brady  
Farm  
Guernseys

We have for sale several fine heifer calves from two weeks to six months old. Also one bull calf from a fine producing cow. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

## A. J. C. C. JERSEYS

## Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

MILK AND CREAM  
PRODUCTION.

By Dairy Division, United States Department of Agriculture.

## The Stable and Barnyard.

The stable should be well lighted, well ventilated, and so constructed that it can be easily kept clean. It

should have a hard, non-absorbent floor, without cracks where filth can collect. Dust or cobwebs should not be allowed to accumulate on the walls and ceiling, and it is a good plan to whitewash the walls and ceiling of the stable at least once a year. Manure should be removed at least once

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DURC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## AYRSHIRES

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington



a day. The manure pile should be some distance from the stable; hog houses, privies, and poultry houses should be far enough away so as not to contaminate the stable air, and the barnyard should be well drained so that there will be no mudholes. A clean yard is a great help in keeping the cows from becoming soiled by mud and manure. The yard should drain away from the buildings, and manure should not be allowed to accumulate in it.

#### Feeds and Feeding.

The odor and flavor of milk are very readily affected by certain feeds, such as rape, cabbage, turnips, and silage, and such feeds should not be given immediately before milking. If fed after milking they will not taint the milk. When the pastures are overrun with garlic or wild onion the cows should be removed from the pasture three or four hours before milking. Moldy and decayed feed and such other feeds as may injuriously affect the cows' health and the character of the milk should be carefully avoided. Dusty hay should not be fed immediately before milking, nor should the cows be bedded at this time, as either of these operations will cause a circulation of dust in the stable which will affect the cleanliness of the milk. It is important that the water, of which the cows need an abundance, should be fresh and pure.

#### Milking and Utensils.

Before milking the cow's udder and flanks should be wiped off with a damp cloth to remove any dust and loose hair which might fall into the pail. The milkers should milk with dry, clean hands, and should practice cleanliness in every respect while handling the milk.

One of the most important things in the production of milk and cream of good quality is the care of the utensils in which they are handled. Utensils can not be properly cleaned without an abundance of boiling water. Equipment for furnishing this water is absolutely necessary where milk and cream of the best quality are produced. For a description of this equipment see the leaflet on "Farm Conveniences for Handling the Cow and her Product."

#### Care of Milk and Cream.

Milk, whether to be sold in its natural state or to be separated, should be removed from the stable immediately after milking. If it is not to be separated it should be cooled at once to a temperature of 50° F. or lower and held there until disposed of.

The separator will produce cream of better quality than is possible with any other means of separation. If a separator is used, it should be thoroughly washed and scalded after each time it is used. If the milk is to be hand skimmed, it should be put into "stotgun" cans for the cream to rise, and the cans should be well covered to keep dust and insects out and be kept in a room free from odors. This is better than putting the milk into shallow vessels.

Thin cream sours more quickly than rich cream. With a rich cream there is less bulk to handle, more skim milk for feeding purposes, and cream is in better condition to make into butter. It is desirable to skim the milk so as to produce a cream containing between 30 and 35 per cent of butter fat. A great advantage

in using a separator is that the richness of the cream can be easily regulated. Cream sours very readily at temperatures above 50° F.; hence it should be kept as much below this temperature as possible.

If warm cream is mixed with cold cream, the whole mass is warmed thereby, and souring will follow more quickly; therefore the newly separated cream should be cooled before adding it to the cream on hand. A thorough stirring each time newly separated cream is added.

#### SOLVING FEED COST PROBLEM.

Mr. B. C. Crabtree of Lynden, Wash., who owns a noted pure bred Jersey herd is a patron of the Lynden Creamery. The price of butter, he states, was rather low last season.

Mr. Crabtree raises both kale and ensilage. Last year the crop was vetch and oats, satisfactory but corn will be planted this season with a view of obtaining a larger yield and thus get a cheaper feed for the second silo crop.

#### ELECTRIC LIGHT FARM REGISTER OF MERIT REPORT.

Editor Northwest Horticulturist & Dairyman:—Our registered herd of Jerseys in register of merit work was started on April 29, 1913. We have now eleven head that have completed their first year test, ten of which have qualified, several of them heifers with first calves. We are well satisfied with their work, and are continuing every animal being tested. We feel confident that next year nearly all will show a decided gain over last year. Following is their work for first year. The first one, being just 5 years of age, therefore being obliged to make the maximum amount of but-



The World's Best and Most Nutritious Animal Feed

CONTAINING

46% PROTEIN AND 10% FAT

UNEQUALLED FOR  
MILK COWS, POULTRY  
and Farm Animals

The U. S. Agricultural Department in Farmers' Bulletins No. 58 and 372 states:

"A BUSHEL OF SOY BEANS IS AT LEAST TWICE AS VALUABLE FOR FEED AS A BUSHEL OF CORN."

"It is almost without an equal as a concentrated feed."

"Proteina" is sold by all dealers. Send for literature and further information.

Pacific Oil Mills, Seattle, Wash.

Electric Light Farm  
A. J. C. C. Jerseys  
FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease Ellensburg, Wash.

## Western Washington Holstein Breeders Association

Will hold its

### First Semi-Annual Sale

on the

SNOHOMISH COUNTY FAIR GROUNDS,  
Snohomish, Wash.

75 Head MARCH 17, 1915 75 Head

#### Consignors:

WM. BISHOP,  
Chimacum.

J. H. HULBERT,  
Mt. Vernon.

J. C. BURMAN,  
Snohomish.

HUGH NESBIT,  
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J. D. DE HOOGH,  
Lynden.

A. E. SMITH,  
Sumas.

GREENBANK FARM,  
Greenbank.

HERMAN STEFFEN,  
Monroe.

HOLLYWOOD FARM,  
Hollywood.

A. B. WINTER,  
Everett.

#### SEVENTY-FIVE HEAD—TUBERCULIN TESTED

The "Best in the West" will be sold at this Sale, which will include a son of a 33-pound cow, and a number of promising young sons and daughters of large record A. R. O. cows, backed by the most fashionable blood lines of the day.

For a copy of the CATALOGUE that will be ready for mailing March 1st, address the Secretary.

Auctioneers:

GUE and LINBARGER

A. B. WINTER,

1515 Hewitt Ave.,  
Everett, Wash.



THE GRAZING SEASON IS APPROACHING WHEN THE  
YOUNG CATTLE ARE WANTED.  
MARCH 17th, 1915.

There is a larger demand than ever for our young registered Holsteins, evidently due to the fact that quite a number of our old customers have realized handsome profits from buying them. Young heifers and bulls raised here from calf are acclimated when ready for service. Having their breeding records and the animals in sight, a judge of dairy stock can size up pretty closely their value as producers in a dairy herd. We have some splendid youngsters to suit those who want either the registered, pure bred or high grades. And we have two registered bulls of serviceable age that could hardly fail to pay any owner of high grade Holsteins less than 200 per cent. on their cost, in the increased value of product from a future herd.

Those having registered herds and in need of a sire will do well to write us for breeding records as we can show some of the best family records in Holstein production and save money to those who otherwise would buy and express from the East.

Write today for our descriptive and complete printed list of Holsteins and Guernseys.

FRYAR & COMPANY

Please Mention  
This Paper

SUMNER, WASH.



terfat of 360 pounds, failed to qualify by a small margin, but doubtless will make the required amount this coming year. We now have 17 on test, as several more heifers have freshened.

St. Lombert's Dainty, 5 years old, 6137 lbs. milk, 361.66 lbs. butter, on test for 365 days.

Wild Rose of Linn, 8 years old, 8575 lbs. milk, 441.8 lbs. butter, on test for 365 days.

Loretta D.'s Queen 3rd, 3 years old, 7855 lbs. milk, 453.7 lbs. butter, on test for 365 days.

Belle's Cornelia, 2 years old, 5855 lbs. milk, 350 lbs. butter, on test for 309 days.

Gertie's Lad's Melinda, 2 years old, 6826 lbs. milk, 362 lbs. butter, on test for 365 days.

Dona Beauty, 9 years old, 9014.6 lbs. milk, 482 lbs. butter, on test for 365 days.

Baby Buffs Fill Pail, 2 years old, 7553.8 lbs. milk, 409 lbs. butter, on test for 298 days.

Waltz's Countess, 2 years old, 7927.6 lbs. milk, 489 lbs. butter, on test for 365 days.

Poppy's Maiden, 2 years old, 6461 lbs. milk, 454 lbs. butter, on test for 345 days.

Lillie White Snowdrop, 2 years old, 5315 lbs. milk, 316 lbs. butter, on test for 330 days.

Queen Buffie's Electra, 3 years old, 8318.3 lbs. milk, 466 lbs. butter, on test for 309 days.

While among these are no phenomenal producers, we are developing an exceptionally high average working herd. As nearly all are quite young and having no silage nor other succulent feed to speak of during last winter, besides they were more or less disturbed from being taken to the state fair, we consider the showing very gratifying, especially as several of the heaviest producers were dried considerably short of their year for another freshening period.

Miss Muriel Olga, still on her first year's test, commencing at 2 years and 8 days old, has produced 6071.1 lbs. milk, 388 lbs. butter in 8 months and 24 days, besides winning first honors at the Washington state fair. This heifer is a daughter of Governor Marigold. We have four of his daughters in our herd, two others freshening before they were 2 years old have averaged 37.7 lbs. butter each for their first seven consecutive months, while the fourth one, freshening in December, made 21.251 lbs. butter in her first 12 days' work.

Others in their second year on official test have made as follows:

Loretta D.'s Queen 3rd, for 20 days in October made 45.826 lbs. butter; in November, 64.433 lbs.; December, 59.37 lbs.

Baby Buffs Fill Pail, for 20 days in September made 35.6 lbs. butter; in October, 66.782 lbs.; in November, 45.708 lbs.; in December, 45.773 lbs.

Waltz's Countess made 58 lbs. butter in December.

We consider also that we have been very fortunate in maintaining breed type characteristics in our herd thus far, for at the state fair of 1914 we won more cash in prizes in very strong competition than any other exhibitor of Jerseys.

Respectfully yours,  
BURT PEASE.

#### SALE OF REGISTERED JERSEYS.

The Inland Empire Jersey Breeders' Association has been organized and will offer at public sale 100 head of registered high class Jerseys at the Interstate Fair ground, Spokane, on June 1, 1915. Every animal put up will have a record indicating capacity as producer, the health is guaranteed and the general appearance may be determined by each observer. The sales manager is Chas. M. Talmadge, Newport, Wash.; Secretary, W. T. Newberry, R. 1, Mica, Wash. The catalog is being made ready. Write for one if interested.

#### BREEDERS ORGANIZED TO SELL HOLSTEINS.

A number of prominent Western Washington Holstein breeders have organized the Western Washington Holstein Breeders' Association. Wm. Bishop, of Chimacum, is president; Calvin Philips, of Seattle, vice-president, and A. B. Winter, of Everett, secretary-treasurer. The principal object of the new organization is to hold one or more auction sales each year, where registered cattle, bred by members of the association, will be sold. At this first meeting, March 17th was selected as the date for holding the first sale, which will be at Snohomish Fair grounds, Snohomish, Wash. The committee appointed to arrange for and manage this sale is composed of Wm. Bishop, Chimacum; J. H. Hulbert, Mt. Vernon; J. C. Barnum, Snohomish; H. E. Olds, Kapowsin, and Guy MacL. Richards, Greenbank.

The cattle to be offered at this sale are as good a lot as ever went under the hammer in the Northwest, and includes the greatest collection of young bulls from high record A. R. O. cows ever offered on the Pacific Coast. Not only are the records back of these youngsters large, but the breeding is equally good coupled with strong individuality. To those looking for females for herd foundation this sale offers a rare opportunity to procure the best. This is a breeders' sale of pure bred stock and the consignors stand back of their offerings.

#### Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD  
Route 1, Box 12 Fairbanks, Wash.

#### HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

A. BENSON  
Lynden, Wash.

#### Chicon Farm Guernseys

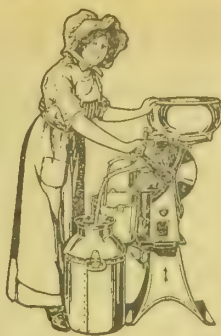
A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.



There is no good reason why you should wait till Spring before getting a

## DE LAVAL CREAM SEPARATOR

ON THE CONTRARY YOU may buy a De Laval NOW and save half its cost by May. If, for any reason, you can't conveniently pay cash, you can buy a De Laval on such liberal terms that it will actually pay for itself.

AS TO YOUR NEED OF A separator, if you have the milk of even a single cow to cream you are wasting quantity and quality of product every day you go without one. This waste is usually greatest in cold weather and with cows old in lactation, and it counts most, of course, when butter prices are high.

THEN WITH A SEPARATOR there is always the sweet, warm skim-milk and saving of time and labor in addition.

WHEN IT COMES TO A choice of separators De Laval superiority is now universally recognized. Those who "know" buy the De Laval to begin with. Those who don't "know" replace their other separator with a De Laval later—thousands of users do that every year. If you already have some other machine the sooner you exchange it for a De Laval the better.

WHY NOT START 1915 right in dairying? SEE and TRY a DE LAVAL NOW when you have plenty of time to investigate thoroughly. The nearest DE LAVAL agent will be glad to set up a machine for you and give you a free trial.

### DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Registered HOLSTEIN and High Grade CATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

H. S. ROYCE

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

## DAIRY EQUIPMENT AT A BARGAIN

One Blizzard ensilage cutter nearly new, a bottle washing plant, complete, and a bottling machine, slightly used all at half price. Further particulars on request.

F. I. MEAD

524 California Building.

Tacoma, Wash.

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

## BLACK LEG

LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.



# AYRSHIRE BREEDERS' ASSOCIATION.

Officers elected at the Fortieth Annual meeting were: John A. Ness, Auburn, Me., president; J. W. Clise, Seattle, Wash.; John R. Valentine, Bryn Mawr, Pa.; Wm. T. Wells, Newington, Conn.; Geo. H. Converse, Woodville, N. Y., vice presidents; C. M. Winslow, Brandon, Vt., secretary-treasurer.

The J. W. Ogden, sterling silver cup, won by Penshurst Farm, Narberth, Pa.

The French Prize Cups for best record in each class during the past year were:

Mature class—Garclaugh Spottie, 22,589 lbs. milk, 816.25 lbs. fat, owned by John R. Valentine, Bryn Mawr, Pa.

Four-Year-Old class—Broomhill Bes-sie 3rd, 14,319 lbs. milk, 530.12 lbs. fat, owned by Barclay Farms, Rosemont, Pa.

The Association voted substantial aid to the Panama-Pacific Exposition, the National Dairy Show and to all other fairs offering \$400 and more to the Ayrshire class.

Forty-eight sat down to the banquet.

C. M. WINSLOW,  
Sec.-Treas.

Brandon, Vt., Jan. 16, 1915

## WESTERN WASHINGTON

### HORTICULTURAL ASSOCIATION

The Fifth Annual Convention of the Western Washington Horticultural Association will be held in the Chamber of Commerce, Bellingham, Thursday and Friday, February 25th and 26th.

Standardization of products and methods and control of their own production through the selling channels by the growers are some of the essential problems for solution at this meeting.

S. J. Harmeling, of Vashon, is president, and J. Wayland Clark, of Bellingham, secretary.

### TILLY ALCARTRA, 30,000-lb. COW.

The Holstein cow, Tilly Alcartra, owned by A. W. Morris & Sons, California, is the first cow to produce over 30,000 pounds a year. Her record is 30452.6 lbs. milk containing 951.3 fat, or equivalent to 1120 lbs. butter.

Tilly Alcartra consumed a generous quantity of well apportioned feeds, although she is not as heavy a feeder as might be supposed from her great production. She showed an especial fondness for stock beets, and these with dried beet pulp and corn silage contributed the succulence to her ration. Her grain ration was a mixture of one part bran. During the year an accurate account was kept of her feed and its cost, and the following table shows her board bill:

| Feed and cost per ton—            |       | Cost of feed. |
|-----------------------------------|-------|---------------|
| 1828 lbs. oats @ \$30             | ..... | \$ 27.42      |
| 1828 lbs. barley @ \$23           | ..... | 21.02         |
| 1828 lbs. bran @ \$27.50          | ..... | 25.13         |
| 1208 lbs. linseed oil meal @ \$34 | ..... | 20.54         |
| 681½ lbs. dried beet pulp @ \$22  | ..... | 7.50          |
| 3226 lbs. corn silage @ \$2....   | ..... | 3.23          |
| 10122 lbs. hay @ \$5              | ..... | 25.31         |
| 15140 lbs. beets @ \$2.50         | ..... | 18.92         |

Total cost of feed .....\$149.07

### MOULD IN BUTTER.

#### Precaution and How to Prevent.

Losses in butter through the growth of mold upon the tub lining, wrapper or in the butter itself, which injures the salability of the product, have led the United States Department of Agriculture to investigate this subject. Mould in butter is usually found in three forms: (1) Orange-yellow areas with some growth



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM  
Box 34, Milltown, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor  
Montesano, Wash.

of mycellum under the surface. (2) Smudge or dirty green areas, either entirely inside the butter or with some surface growth. (3) Green-surface colonies, either upon the butter, causing decomposition, or upon the container or wrappings which will injure the appearance of the butter.

Experiments in producing molds artificially in samples of butter indicate that a growth of mold in or about butter is favored by excessive curd, by "leaky" butter or by wet surfaces, wet wrappings or highly moist air. If butter molds readily it is an indication of insufficient salting, as salt up to 2.5 to 3 per cent is sufficient to prevent mold or reduce it to a negligible amount. The growth of molds, moreover, is largely reduced by keeping the butter at low temperatures. Improper storage temperatures, accompanied as they frequently are with moist conditions, are favorable to mold in butter. Unsalted butter is more subject to deterioration from micro-organisms than salted butter. Successful storage of such butter is therefore dependent upon scrupulously clean, dry refrigeration. Cellars and ice refrigeration rarely furnish conditions which will prevent mold in unsalted or slightly salted butter, although it may be delayed or reduced. Butter properly made and normally salted (up to 2.5 to 3 per cent, equivalent to the use of a 12 to 15 per cent brine) will not show mold under reasonably careful handling.

Investigators in summarizing their



## Holsteins Fresh Cows and Registered Bulls

A very choice bunch of youngsters from which to select.

Our young fresh cows are being sold to old customers who are constantly enlarging their herds, and we are supplying a number to beginners, who buy individuals or in bunch lots. Every cow is sold on its merits as a producer, and we have some fine milk and butter record cattle. The young stock is in excellent condition and prospective buyers seem to appreciate the opportunity we offer in heifers and cows.

We also have some fine two-year-old, pure-bred bulls with high records back on both sides to offer at reasonable prices. Having a large herd of practical dairy cattle on hand we can supply almost any want in the dairy cattle line, as corroborated by our many satisfied patrons.

Write or make appointment for further particulars.

## VAN WOERDEN & FISHER

Seattle Phone, Sidney 767.

THOMAS, WASH.

On Interurban, half way between Tacoma and Seattle.

Please mention this paper

### HOLSTEINS WITH HIGHEST RECORDS

Our Registered Holstein Cows are well up near the 1,000 pound per year butter record. One of our two-year cows gave 19,510 lbs. milk and 825 lbs. butter in 365 days.

In her 3rd year she starts with 2,336 lbs. milk and 108 lbs. butter in 30 days. Our entire herd is above the 500 lb. butter record.

Do you want some youngsters of this breeding? Then write for particulars and prices.

J. W. Hollinshead, LADNERS, B. C.

results emphasize the fact that well-washed butter is less subject to mold than that with an excess of curd, but the essential factor in molding seems to be, water, not protein.

"Leaky" butter from which milky water exudes and collects in the wrapper or container furnishes the best conditions for the beginning of mold growth. From these wet areas colonies may spread to the butter itself.

Mold, the investigators find, will not grow upon the surface of a piece of butter exposed to air at ordinary humidities. The water in the butter

is not sufficiently available to the mold to support the development of a colony unless evaporation is reduced by a high-moisture content of the surrounding air. In closed packages, wet or damp cellars, or carelessly packed masses with cracks or fissures in which moisture collects, mold may seriously injure the appearance of the packages or actually induce great changes in the butter itself.

Green molds may damage normally salted butter if cracks and open spaces are left by bad packing. Other investigators have found that paraffining the tubs or boxes prevents



mold on the container and the liner by preventing the escape of water which would leave the air space necessary for mold growth.

Very moderate salting prevents the appearance of the orange-yellow patches and the smudges. The green molds affect normally salted butter only when it is held under conditions of temperature or moisture that are favorable to mold growth.

#### SOME VALLEY VIEW HOLSTEINS.

Tobe De Kol 2nd Johanna and Others.

H. C. Davis, Granger, Wash., reports a good 30-day milk and butter record of his cow Tobe De Kol 2nd Johanna, 2867.7 lbs. milk and nearly 120 lbs. butter. For 7 days she made 29.67 lbs. butter and gave over 100 lbs. milk six different days of that time, her best day being 105.8 lbs. milk.

Mr. Davis has a two-year-old heifer and a heifer calf from this cow. These youngsters are sired by Model, whose daughters are all good producers. One of his two-year-olds made nearly 20 lbs. butter in seven days. Mr. Davis has a good herd of young cows which will be headed by the \$10,000 bull purchased last month from the Munroe Company, Spokane.

#### BEST TWO-YEAR AYRSHIRE COW FROM WILLOWMOOR SIRE.

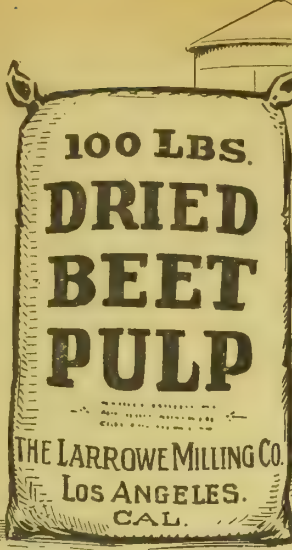
Beuchan Ermine, the best 2-year Ayrshire cow with a record of 15186 lbs. milk and 516.64 lbs. butter in one year is the world's best record for that age, as described in another column.

This showing is of particular interest to Pacific Coast breeders because of the fact that Beuchan Peter Pan, the sire of this heifer and one of the greatest known sires in the dairy world today, is owned by Willowmoor Farms, Redmond, Washington, near Seattle.

Eight daughters of this sire, all after first or second calving, have qualified for the Advanced Register with records averaging 11300 lbs. of milk and 387 lbs. of fat.

#### SIL0 AND SILAGE VERY SATISFACTORY.

Had I been without good corn ensilage it would have become necessary to dispose of some of my milk cows this spring, said Mrs. D. F. Alward, of Orting, who owns a fine herd of Registered Red Polled cattle. Mrs. Alward planted 5 acres of the Red Cob Ensilage Corn last year. About one-third of it was used for soiling and the balance put into a Crown silo purchased from the Holland Cook Company, Tacoma. The corn developed and yielded well, was cut at the glazing stage and made most excellent silage. This year Mrs. Alward will plant about 10 acres of the same variety of corn and she is preparing a crop rotation whereby a crop of vetch and oats can be grown between October and June for the final silo crop, then corn on the same ground for the second silo crop thus harvesting 3 crops in two years while keeping up fertility in a good measure by means of the vetch and barnyard fertilizers. Mrs. Alward has developed some good milkers, 60 pound, 4 per cent. a day in her red polled herd which is from some of the most highly bred in this country. She has realized a fair measure of profit, having had plenty of range and now sees good prospects ahead for revenue



# LARROWE'S Dried Beet Pulp

## Puts Silage in the Background

Thousands of dairymen are now feeding this palatable milk producing feed and banking their extra profits. It solves the problem of providing an all-the-year succulent feed for dairy cows.

**YOU DON'T NEED A SILO**

One ton of Larrowe's Dried Beet Pulp contains as much nutriment as five tons of silage, and in addition is clean, healthful and succulent. It is a wonderful milk producer; always ready at any season. It saves the expense of building a silo, the cost of filling it and the necessity of growing a crop suitable for silage.

Order a single sack from your feed dealer and prove its worth by feeding to one cow whose milk record you know.



## LARROWE'S

Always uniform

Keeps indefinitely

Aids digestion



Light and bulky  
Swells to six times  
its original bulk  
when moistened

The ideal feed not only for dairy cows, but also for hogs, goats, sheep, poultry and horses. It is wonderfully rich in carbohydrates; makes a splendid combination with alfalfa. Larrowe's Dried Beet Pulp can be had either plain or with molasses.

Considering the present high price of bran and mill feeds, now is a good time to commence feeding Larrowe's Dried Beet Pulp. Order from your feed dealer today.

Write for free copy of our booklet,

**"PROFITABLE FEEDING"**

It gives valuable information about feeds and feeding and tells you how you can get more milk from your cows at no extra cost.

## The Larrowe Milling Company

SIXTH FLOOR, CENTRAL BLDG.

LOS ANGELES, CALIF.

Please mention this paper

from the deep milking dual purpose cattle by means of good silage crops as an economical feed. The local butchers are always ready to take any surplus youngsters at the very highest market price. Some choice young pure-bred sires have been sold to dairymen in various parts of the state. In pure-bred poultry here are fine Barred, Buff, Partridge and white Plymouth Rocks, all varieties making good in egg production. As grain prices advance, we are compelled, for our own best interests, to grow more feed and by means of the silo, says Mrs. Alward, it can be done very satisfactorily.

#### COWS AN AVERAGE DAIRYMEN.

The estimated cost of keeping cows in a milking herd in King County, according to Milk Inspector Henderson, is \$97.50 while the gross receipt from the average cow at 3½ per quart is \$94. This indicating that the "average" dairyman is operating at a loss. This condition, while like that of the "average" merchant who is also a loser, can be changed. Many engaged in various occupations are losers while they don't realize their situation soon enough. The way out for dairymen is to begin on some

"WE PURCHASE and always pay best prevailing market prices on all kinds of LIVE STOCK, HIDES, PELTS, TALLOW, and POULTRY, and will quote you if you will advise us what you have to offer for sale. In return we offer to sell you our New Process Beef Scraps for chickens. Bone Meal; Granulated Bone; Digestible Tankage for hog food, and all kinds of fertilizers. We patronize Home Industry and ask you to reciprocate."

#### CARSTENS PACKING COMPANY

Tacoma, Washington

Please mention this paper

practical way to reduce their feed cost, to increase the producing capacity of the cows and to minimize the amount of labor by increasing its efficiency. Leading dairymen, that is, those who are doing better than the "average" are figuring on raising more of the feed required in 1915 than ever before. There will be more clover, vetch, alfalfa and mixed grasses sown than ever before and the corn acreage planted will be much larger. In fact, there is likely to be a scramble for good seed in some lines. Thousands of silos will be built of the kind which are air tight, such that afford satisfaction. The progressive dairyman differs

from his "average" brother farmer in that he is very particular to use only well tested, registered sires and sees to it that a cow whose board bill is 30 cents a day produces in a salable article, considerable in excess of that figure each day during her lactation period, also with proper breeding, that her offspring is better than her dam.

And finally there will be an attempt by the dairymen to organize and market standard quantities of their milk and butter in order to reach consumers in a manner to afford a higher measure of satisfaction than possibly could be attained by the "average" dairyman.



### KEATINGS' DAIRYING DEMONSTRATION.

Years Net Return Per Cow, \$131.39  
On Sunnyside Farm.

In the fall of 1913, Mr. Harry E. Keating, of Burton, King County, Wash., who had purchased a partly improved place on which there is a bearing orchard, concluded to engage in dairying and with no previous experience ventured to start with a small herd. Being a reader of the Horticulturist and Dairyman, he observed that among the advertisers, Mr. Calvin Phillips, Proprietor of Greenbank Farms, was offering some high grade Guernseys and Jerseys, of which the actual production in milk and estimated butter fat for a given time had been ascertained as advertised, and he selected 5 head. Some of the "old timers," seeing the cows on arrival, rather ridiculed the purchase, but Mr. Keating was determined to make a careful business-like trial at dairying and observed



Mr. Keating's Five Guernseys and the most approved methods in feeding though handicapped in the matter of pasture and home grown feed. He kept a careful account for the year 1914 and brought to the office of this paper the following statement last month.

Five Grade Guernseys and Jerseys.  
January 1st to December 1st, 1914.  
May 1, feed on hand .....\$ 35.00  
Milk and butter sold ..... 945.89  
8 head hogs raised ..... 125.00  
1 veal ..... 10.00  
2 yearling heifers ..... 100.00  
1 yearling heifer ..... 35.00  
1 3 months' calf ..... 25.00  
Cream, milk for family .... 75.00

\$1,350.89

Feed bought .....\$564.94  
Feed raised ..... 75.00  
Int. on investment.. 54.00

\$ 693.94

Net value of increase ..... \$ 656.95

Net return per cow ..... \$ 131.39  
Pounds butter made ..... 2350  
Pounds butter per cow ..... 470

Although Mr. Keating had never milked a cow six months before buying this herd naturally he feels that a good foundation has been laid for profitable dairying by last years experience. This year he is preparing to supply considerable more pasture and will raise some vetch and oats to reduce the feed bill.

It is demonstrations of this kind which determines whether or not a dairyman is building on the proper foundation and when a community of farmers work together along the same line bestowing common sense care on cows which yield some measure of profit over cost of feed, then it becomes difficult to keep up bars

between capital and the dairy farmer. They will soon get together on long time loans at very moderate rates of interest.

### ORTON'S DAIRY AND FRUIT FARM.

Mr. C. W. Orton, Sumner, Wash., who combines berry growing with dairying, is winning both national and world-wide fame for clean and profit producing methods in practice on his dairy and fruit farm. Recently he won the prize in the certified milk contest by the King County Medical Society. He also holds the record for producing milk with the lowest average bacteria count during the five years that he has been shipping to Seattle. Three years ago he was awarded the highest prize for certified milk at the International Dairy Show in Milwaukee in competition with entries from all parts of the United States and Canada. Mr. Orton has a model farm at

Jerseys—450 lbs. butter per cow.

Sumner, one of the most sanitary features of which is a separate milking room of concrete where the cows are taken to be milked and then returned to the stables.

A noted dairy expert from Europe considered it a privilege to have visited Mr. Orton's place.

### RAISING DAIRY CATTLE.

A few dairy farmers on the Pacific Coast have conceived the plan of raising young dairy cows as a business and are succeeding well. The great demand for milk created by the condensors has caused many good heifer calves to be slaughtered and large importations of young cows were made from the East the past few years, at considerable expense. While it takes some time to establish a herd for the raising of dairy cows as a business, under well laid plans and proper care it can be done with safety from a profit standpoint.

At the farmers' agricultural short course, Puyallup, H. L. Blanchard gave the cost of producing a two-year-old heifer at \$52 to \$58. If her dam is a high grade cow, of any of the leading dairy breeds, with production equivalent to 350 lbs. butter, or over, a year, and her sire is a registered animal showing some degree of merit, then such young cow is reasonably worth about double the figure of estimated cost above given.

Those who can operate with registered stock entirely, will still do better, but it takes a little more capital at the start. The actual cost of raising a heifer is about the same whether grade or pure bred. Those who are giving common sense care, after using good judgment in making selections, find no difficulty to finance such project. Bankers in the cities



### PUGET SOUND HERD

Holstein-Friesian Cattle — Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years, 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

Seventy-five A. R. O. cows in herd. All bulls for sale are from official tested dams. Write for prices and mention this paper.

Wm. Bishop, Chimacum, Wash.

### Succulent Feed all Year

Marrow Cabbage affords one of the best and cheapest sources of green feed during the dry months of July and August, also through the winter months, for the Coast section, according to those who have tried it and obtained 80 tons per acre. It stands the Coast winters afield. Entire plant edible and relished by all stock and poultry.

A limited amount of guaranteed home grown seed is offered. Send 50 cents today for enough seed to plant 20 square rods, or inclose a dollar bill for a generous amount for a larger plot. Price on quantity for an acre or more on application. Interest your neighbors. Descriptive illustrated circulars free.

E. E. MARTIN Bangor, Wash.

### Crystal Springs Farm

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

GUY C. CHAPMAN,  
Pomona Wash.

### REGISTERED JERSEY HEIFERS

Three solid colored heifers fifteen months old; all out of Register of Merit cows—two are prize winners. Price on application.

DAVID C. DILWORTH  
Buckeye, Wash.

Please mention this paper

**FRIESIAN-HOLSTEIN CATTLE**—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. N. P. SOR-ENSON, Bellingham, Wash., R. F. D. 2.

### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

JEFFERY HILTON,  
Marysville, Wash.

of the Pacific Northwest have expressed a willingness to make liberal advances to those who will engage in practical dairy cattle breeding operations. The speculative feature as well as slipshod methods does not serve to encourage credit extension, but earnest painstaking efforts are good qualifications for those requiring to be financed in the project of raising dairy cows.



### REGISTERED HOLSTEINS

FOR SALE

Young cows and heifers and a young bull, all out of A. R. O. dams and high record sires. Write for prices and further record.

J. H. De Hoogh & Sons  
Twin Brook Stock Farm  
LYNDEN, WASH.

### Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

**GUERNSEYS** — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.



**CALF SCOURS.**

The chief causes of calf scours may be summed up as follows:

1. Over feeding. This is probably the most common cause. Feed regular amounts and make all changes gradually.

2. Cold milk. The milk should be fed at approximately 100 degrees Fahrenheit. This is particularly important the first few weeks.

3. Sour milk. This seems to be particularly injurious when fed only occasionally. If it is not possible to have the milk sweet at all times, it is safer to have it sour at all times.

4. Dirty pails. These are objectionable at all times, but particularly so if allowed to become soiled in a stall where a case of scours has occurred. All pails should be removed from the stall and rinsed, or better, scalded after each feed.

5. Dirty stalls. The calf stalls should be kept clean and dry, and especially after a case of scours, should be thoroughly cleaned and disinfected.

6. Feeding grain in the milk. It is much better to feed the grain dry after the calf has eaten its milk.

In cases of scours the following will be found helpful:

1—Reduce feed one-half. 2—Give one teaspoonful of the following mixture to each pint of milk: one part formalin to 33 parts water. 3—In severe cases begin treatment by giving a drench, two or three ounces castor oil in a pint of milk. Follow by formalin treatment. 4—Give from one teaspoonful to one tablespoonful of dried blood at each feed. When dried blood is used regularly it seems to act as a preventive as well as a cure.—Jas. N. Price, dairy specialist, State College, Pullman, Wash.

**"STARTERS" FOR SWISS CHEESE.**

The use of cultures of *Bacillus bulgaricus* in the manufacture of Swiss cheese is suggested in a new bulletin of the United States Department of Agriculture, No. 148, "The Use of *Bacillus Bulgaricus* in Starters For Making Swiss or Emmental Cheese" as a means of overcoming many of the difficulties experienced by American makers. The art of Swiss-cheese making is highly developed but few of the underlying scientific principles have yet been discovered and the difficulties in this way have led many manufacturers to believe that a really high-grade cheese of this type can be produced in only a few localities. As a matter of fact, the average quality of the American product has not been so high as that of the European. With the aid of the *Bacillus bulgaricus*, however, there is reason to believe that some of the unfavorable conditions may be remedied.

Hitherto the main troubles have been cause by the presence of microorganisms which generate abnormal gas and produce what is known as "nissler" or "pressler" cheese, in which the normal formation of the eyes is prevented. Recent experiments have shown that these microorganisms can be to a great extent suppressed by the use of starters, a practice which is now common in butter making. For this purpose the *Bacillus bulgaricus* group of bacteria appears to have the most desirable

qualifications. Moreover these bacteria are easily obtained and cheese makers who are willing to report on the success of their work can obtain a limited supply from the Department of Agriculture.

Experiments conducted by the investigators in a commercial factory showed that by the use of these cultures for starters the faults commonly found in milk delivered to Swiss-cheese factories early in the spring may be overcome and good cheese made at that season. More-

over it is possible to make cheese successfully once a day instead of twice, the prevailing practice. Making cheese twice a day calls for long hours for the factory hands and has other disadvantages. It was also found that cheese could be made in winter as well as in summer. About 3 per cent. of starter gave the best results, the amount varying, however, with the condition of the culture. Detailed information in regard to these and similar points is published in the bulletin.

**STOCK****PRODUCTION AND THE COST.****More Hogs in Coast Section.**

Mr. W. H. Franklin, proprietor of the Fisherbrook Farm at Milltown, Wash., commenting on Mr. Peterson's cost of producing hogs at Mountbourne, states from his own experience it costs less than 5 cents to put block pork on the market when a part of the feed is bought. Mr. Franklin uses the by-products of the dairy and farm, including any waste ensilage found in the mangers of the cattle.

With the present high cost of feed, farmers will need to figure very carefully and prepare to grow more clover and some mixed grain, such as barley, peas and corn. Mr. Franklin's corn yielded over 40 bushels per acre last season, and made excellent fodder, besides the same ground produced a large yield of pumpkins, an excellent help in the hog feed.

Mr. Franklin, with others of his locality, is putting forth great efforts to build up choice pure bred herds of Berkshire hogs and Guernsey cattle, and figures that in only a few years hence the quality will be fully up to any which can be obtained from distant states. The condensers have created a demand for great quantities of milk rather than a high percentage of butter fat, and should the market for condensed milk become overstocked many of the present owners of dairy herds may find they are not prepared to make butter profitably, therefore would face a difficult problem unless some good hogs are available to help turn the tide of prosperity by means of the by-products. Without regard

to what market changes may develop, it is a safe rule to carefully plan for the very best yield possible to obtain in some of the leguminous and the grain crops best adapted to the farmer's locality. The Coast farmers will do well to gradually prepare to raise more hogs.

**HOG FEED RAISING.  
Purple Vetch.**

Growing hog feed on the uplands in the Coast Section of Washington, far ahead of anything else, says M. J. Newhouse in the Kirkland News, we must place Canada field peas, Eureka bald barley, the clovers and the vetches. Of the vetches, a new variety, known as the Purple vetch gave immense and quick returns. The soil upon which these were tried out was uniform and very poor and at no time was water supplied by irrigation. We tried to make conditions as nearly what they ordinarily are as we could. The writer has saved the barley and the peas and has them on exhibit at the school house. Both the barley and the peas matured perfectly and the latter produced a large amount of vine.

**HOGS SACRIFICED.**

Farmers are losing their nerves on the hog question in too many cases. More than twice as many are being marketed now as last year at this time according to the Portland Oregonian. Wheat at \$1.50 per bushel is not satisfactory feed for hogs at 7 cents per pound.

These abnormal conditions are to

**"B. K. M. BERKSHIRES"**

Any pig we ship, may be returned if not satisfactory when it reaches the purchaser, and we will refund purchase price.

Good pigs \$10.00 to \$15.00 each.

**WOODLAND FARM**

Lacey, Thurston Co., Washington

**Durocs' Profitable**

My 7-month Durocs made world record gains this season. The short feeding time is where the profit is derived and there is money in hogs in the Northwest. Do you want a few youngsters, then write today.

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**AUCTIONEER****WM. ATKINSON**

Vancouver Blk., Vancouver, B. C.

Specialist in dairy breeds; graduate of Jones' National School of Auctioneering. Thoroughly experienced and wide acquaintance in the Pacific Northwest. Write for particulars.

**SILVER BIRCH FARM**  
**BERKSHIRE**  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3 NEWPORT, W.V.

**O.I. Hogs****English Shire Horses**

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices.  
A. L. PIERCE, Granger, Wash.

**Berkshire Hogs****ANY AGE**

Do you want some prolific money-making Berkshires? Then make application as early as possible. Prices very reasonable.

**PETER HANSON**

Box 62, East Stanwood, Wash.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.



Ayrshire sire Triune No. 11304, which won 21 firsts and champions in Oregon, Washington and Canada. His get won over 100 firsts and champions last fall. His dam was the world's champion butter cow of the breed for 4 years. In the Crescent Hill Farm Herd, W. J. Domes, Proprietor, McCoy, Oregon.



be regretted. They arise largely from a lack of business acumen among farmers. They do not think far enough ahead. They have, it is true, done wonders, thanks to the crusade for more hogs that the stockyards and packing-house people have made, assisted very largely by the railways. But another forward step must be made by the farmers—they must not only grow hogs; they must grow feed for them. The idea that wheat is the only feed or the best feed for making pork is fallacious. Just so long as the farmers depend upon wheat we are liable at any time to have conditions arise as they exist at present.

The farmers, especially the small farmers, should raise, as far as possible, their own hog feed—alfalfa, corn, peas — anything for finishing. They should not depend upon the wheat growers. They should so conduct the business as to buy wheat when the market justifies, but to depend almost solely upon it is sheer folly.

It looks now as if next year we would be sending East for brood sows again. Surely if the present shipments continue for another month or two we must. Then we shall be back right where we were seven years ago—starting anew in the business.

The farmers who are now preparing to keep their hogs and to raise feed of some kind, keeping the cost of pork raising below 5 cents will surely profit for their efforts.

#### SMOKING THE MEATS.

Pickled and cured meats are smoked to aid in their preservation. The smoke seals up the pores, acts as a vermifuge, aids in drying, and adds flavor to the product.

The smoke house should be six to eight feet high for ordinary farm use. Small openings under the eaves, or a chimney in the roof will provide the essential free circulation. A fire-pot built outside of the house proper, with a flue through which the smoke may be conducted to the meat chamber, gives the best results. A fire may be built on the floor of the house when the former method can not be adopted.

Brick houses are best, but large drygoods boxes and even barrels may be made to serve as smoke houses where only small amounts of meat are to be smoked. However, the curing of meat in such substitutes is more difficult and the results less uniform.

Green hickory or maple smothered with sawdust of the same material gives the best results. Hard woods are always preferable to soft woods. Resinous woods (pines, firs, spruces) should never be used, because they are likely to impart bad flavors to the product. In the production of Westphalia hams, Juniper wood and berries are used.

#### Filling the House.

Before putting meat into the smoke house, take it out of the brine and let it drip for two days. In cases where the brine was strong, it will be very advisable to soak the pieces in cold water over night to prevent a crust forming on the outside when it is drained. Then suspend all the meat below the ventilators so that no two pieces come into contact, as this would prevent uniform smoking.

#### Keeping Up the Fire.

A slow fire may then be lighted, warming up the meat gradually. In

cold climates it is best to keep the fire going at a steady temperature until the smoking is completed, in from twenty-four to thirty hours.

In spring or summer a fire may be started every two or three days for two weeks, when the meat will be sufficiently colored.

Smoke will not penetrate frozen meat. Flies should be excluded by keeping the house dark and the meat cooled by opening the doors and ventilators.

#### Keeping Smoked Meats.

A dry, cool cellar or attic with free circulation will be the best place in which to keep smoked meats at all seasons, provided it is kept dark and the flies excluded. If it is desired to keep the meat for a long time, wrap it in waxed paper, then in muslin, or canvas, and hang it in a dry, airy, cool place.

WM. HISLOP,  
Experiment Station, Pullman, Wash.

#### CATTLE IMPORTS.

Canada, during the first eleven months of 1914, sent to the United States 176,205 cattle, appraised at \$8,552,095. The Mexican contribution during the same period was 496,802 head, valued at \$9,017,316 according to the Chicago Live Stock World. During the corresponding period of 1913 Canada sent 192,373 head, valued at \$6,131,218, and Mexico 464,254, valued at \$6,462,105. The figures indicate the superiority of Canadian stock, although much of the stuff that came to the United States last year was dairy yard culls that went to the cannery. Feeders give Canadian cattle a good reputation, but few care for a second experience with Mexicans.

Dr. Park Reed Willis of Seattle recently took over one of the most valuable Guernsey sires to be obtained in Wisconsin for his valuable Guernsey dairy east of Lake Washington. It will be but a few years until the Guernsey breeders of this state will set their brother breeders of Wisconsin to do some tall figuring.

#### CASCADE INTERNATIONAL STOCK SHOW.

The Cascade International Stock Show has been launched for November 22-27 at North Yakima. The premium list will be about \$15,000 of which more than half has been subscribed by the breeders.

Dr. S. B. Nelson, Pullman, has been elected secretary.

#### Advisory Board.

H. C. Davis, Granger; J. H. McCroskey, Sprague; George Gue, North Yakima; Alfred Sinclair, North Yakima; A. L. Pierce, Granger; I. H. Lowry, Winchester, Idaho; C. S. Palmer, Ellensburg; A. A. Stauffer, Buhl, Idaho; H. C. Royce, Tacoma; E. N. Newberry, jr., Mead; E. R. Brady, Satsop; E. L. Brewer, Satsop; A. L. Giles, Chinook; Thos. Carstens, Tacoma; C. H. Frye, Seattle; G. I. C. Barton, Seattle; Henry Wechter, Seattle; William Pollman, Baker City, Oregon; J. W. Clise, Seattle; William Bishop, Chimacum; E. D. Munroe, Spokane; R. N. Stanfield, Stanfield, Oregon; Frank Lowden, Walla Walla; W. H. Little, Wenatchee; L. O. Dart, Republic; J. L. Wandling, Mabton; Newton Burgess, Pilot Rock Oregon; J. L. Cox, Tacoma; Alex. Morrison, Valley; John McGregor, Hooper; Chas. M. Talmadge; O. M. Plummer, North

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| 3-inch ..... | 5½ lbs.        | \$15.00          |
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Free on board cars, Seattle. Minimum carload, 30,000 lbs.

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**\$7 PER TON CHEAPER THAN BRAN**

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Write for sample and literature



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**GOOD REGISTERED BERKSHIRES** —  
Choice pigs, \$10 each at weaning time.  
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Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale.

Full particulars on request.  
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#### AUCTIONEER

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North Yakima, Wash.

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. **GEO. W. HAY-TON**, Mt. Vernon, Wash. R. 3, Box 73.

**FOR SALE** — Pedigreed O. I. C. Hogs \$15 each. Wild and Bronze Turkeys, eggs 25c and 35c. Pure bred White Leghorns eggs 15 for \$1.00. 100 for \$4.50. **E. Y. SANDERS**, Roy, Wash.



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#### HIDES AND LIVE STOCK.

##### Conditions According to Government Report.

From two-fifths to less than one-half of the leather used in this country is imported, about 25 per cent. of the foreign hides coming from Argentina, 15 per cent. from Canada, 11 per cent. from Mexico, 8½ per cent. from European Russia, and 7½ per cent. from France. Since the outbreak of the war, importations have shown a certain falling off, those for September, 1914, for example, being only 34,000,000 pounds, instead of 45,000,000 pounds the year previous. There is, however, little reason to suppose that this decrease will be permanent or of sufficient importance to create any real scarcity. Since the great bulk of the imported hides come from countries that are not at war, shipments are not interfered with in any way, and the only factor to be considered is the possibility of an increased demand by the warring countries.

It is believed, however, that the United States is now in a better condition to face such a situation than for years past. The tide, it seems, has turned. Instead of live stock steadily decreasing year after year, this year for the first time, as has been said, all classes show an appreciable increase. Including horses, mules, milch cows, beef cattle, sheep, and swine, there were on January 1, 1915, 7,712,000 more farm animals in the United States than on January 1, 1914. The increase in the total value was \$78,024,000., or 1.3 per cent. It is quite true that this increase is not yet proportional to the increase in population, which is approximately 2 per cent; but the fact that there is an increase, that the tide seems definitely to have turned, is regarded as a sufficient answer to alarming exaggerations and misleading figures.

#### PRODUCING CHEAPER PORK.

There is no animal which pays the average farmer so well as the hog. It is a mistaken idea that there is not money in pork merely because wheat prices are soaring skyward. A rising market for wheat is an incentive for the progressive hog raiser to grow more of some adaptable feed, and he is planning to do so this year. In the first place prepare for a rich pasture either of clover, alfalfa or mixed grasses. The feed of a 225-pound hog should be more than half pasture. In the second place grow whatever grain you can, peas and barley if not wheat or corn. Growing some of the hog feed even if it is potatoes that require cooking. Bul-

letin No. 63 of the State Agricultural Experiment Station, Pullman, Washington, by Ashby and Monroe, states that in many districts nothing is superior to field peas for rounding off the hog cheaply.

When sown early in the spring they are ready for feeding about July 20th to August 1st. No crop is better adapted to hogging off.

In 1909 Mr. H. H. Curtis (near Pullman) put 20 pigs, average weight 56 lbs., into an acre of field peas. It carried them for 41 days with a gain of 49 lbs. each, or a total of 980 lbs. At 7c per lb. this gain paid all expenses of the crop and left a net profit of \$45.85.

In 1910 four acres carried 42 pigs just 15 days for Mr. Curtis. The net profit was \$5.60 per acre. It should be noted that 1909 was a very favorable year for field peas. 1910 was unusually hot and dry, the peas blighted badly and the pods were poorly filled.

In a test of oats and peas for a forage crop carried on at the Washington Experiment Station in the summer of 1913, it was found that the crop netted \$39.90 per acre after paying for supplemental feeds and the cost of producing the crop.

Dairy by-products are always good hog feed, but should be in uniform condition from day to day.

Tankage is a packing house by-product rich in protein. It is useful to combine with feeds, like corn, that are deficient in protein. Mr. Bridgefarmer, of Palouse, says he feeds a little to all his brood sows for a few weeks before farrowing and it keeps them from eating their pigs.

Roots, including mangel wurzels, sugar beets, carrots and turnips, are valuable for supplying succulence to pigs confined to dry feed. There is very little, if anything, gained by feeding roots to pigs on good pasture. The results of various feeding experiments indicate that about 600 to 800 lbs. of roots will take the place of 100 lbs. of grain when the roots do not constitute over 40 per cent of the ration. The experiments further indicate that 3 lbs. of good sugar beets are about equal to 4 lbs. of stock carrots and that carrots and mangel wurzels are about equal in feeding value.

Pumpkins are similar to roots in feeding value. They add bulk and succulence to the ration and the seeds are considered an excellent preventive of worms. In certain feeding experiments 273 lbs. of grain and 376 lbs. of raw pumpkin produced 100 lbs. of pork. Squashes are considered fully equal to pumpkins.

Potatoes. Some seasons this crop is low in price and can be fed to advantage. Danish experiments have shown that 400 lbs. of boiled potatoes are about equivalent to 100 lbs. of grain. In experiments conducted at the Wisconsin station, 441 lbs. of cooked potatoes took the place of 100 lbs. of corn meal, the potatoes constituting one-fourth the ration by weight. Potatoes should be cooked before feeding and should be supplemented with some nitrogenous feed-stuff such as peas, tankage or shorts.

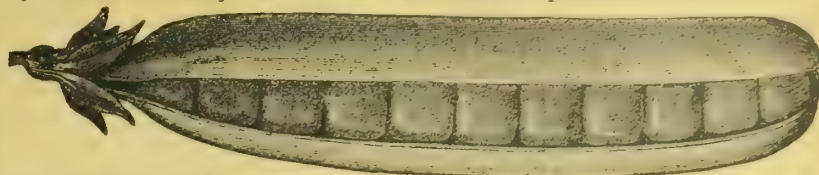
##### Amount of Grain on Pasture.

If pasture alone is not profitable, how much grain should be used? This will depend upon the cost of grain, cost of pasture and the number of hogs in proportion to the amount of pasture available. Usually it pays

Is the aim this year, and for the purpose, you need the very

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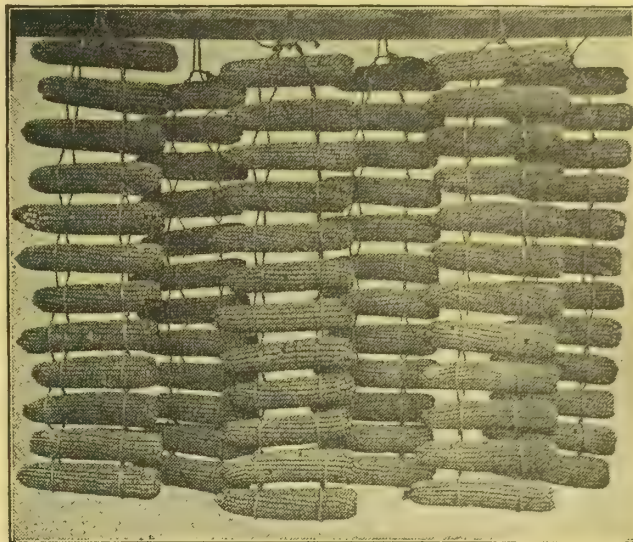


#### ALDERMAN PEAS

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#### COPENHAGEN MARKET CABBAGE

#### DANISH MANGEL WURZEL STUDSTRAP



#### PRIDE OF THE NORTH CORN

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Seattle, Wash.

best to feed at least 2 per cent of grain to hogs or shotes that are being fattened. This means two pounds of grain daily for each 100 pounds of live weight of pigs.

With alfalfa or clover pasture, wheat, corn or barley are satisfactory grains. A mixture of any two or all of them would be more efficient than any one alone. Barley or wheat should always be rolled, ground or soaked. If the pasture crop is not a legume (nitrogen gathering plant as alfalfa, clover, vetch or peas), it would be profitable to mix a little tankage with the grain.

For example: 10 pigs weighing 50 lbs. each are grazing on pasture. How much grain should they have daily and of what sort?

$3\% \times (10 \times 50) = 3\% \text{ of } 500 = 15 \text{ lbs. grain daily.}$

Proportion of feeds might well be: 4 lbs. rolled barley, 4 lbs. rolled wheat and 1 lb. tankage, or 4 lbs. rolled wheat, 2 lbs. rolled oats, 1 lb. rolled barley and 1 lb. shorts.

Give them 15 lbs. daily of the grain mixture.

If the pasture is alfalfa the same quantity of grain should be fed, but in the first combination tankage could be omitted, while in the second most of the oats and shorts could be dropped out.

##### Houses and Housing.

The essentials are:

1. Dryness.
2. Ventilation.
3. Light.
4. Freedom from draughts.
5. Sufficient warmth.
6. Convenience.

Provide these without undue expense and the house is satisfactory.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

MRS. D. F. ALWARD,  
Orting, Wash.

Farmers' Bulletin No. 438, "Hog Houses," U. S. Department of Agriculture, which can be secured free, covers the question well and is well illustrated.

Since the money invested in buildings gives no direct return, it should not be used extravagantly, but every dollar should buy its full worth of shelter and convenience.

Select a well-drained location and plan for plenty of sunlight, both within and without. A southerly exposure is usually preferable, both as to lay of land and frontage of building. If for any reason the ground is apt to be damp, floor the house. Concrete is being used in the better class of hog houses. One objection to its use is the fact that it is frequently very cold. This trouble can be greatly diminished by providing drainage beneath the concrete. It is best to use gravel or cinders well packed for a foundation. In farrowing pens where concrete is used for the floor it is well to make a board overlay for a part of the pen, probably 6x8 feet. Place the bedding on this and the sow will take advantage of it.

##### Whitewash for Disinfecting.

Dissolve one ounce of bichloride of mercury in four ounces of wood alcohol and add the solution to eight gallons of whitewash. This is often used in cleaning up after contagious diseases.



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### CORRECT TEMPERATURES FOR BROODING

The best temperature at which to keep a brooder or hover, according to the U. S. Department of Agriculture's specialist, depends upon the position of the thermometer, the style of the hover, the age of the chickens, and the weather conditions. Aim to keep the chickens comfortable. As the operator learns by the actions of the chickens the amount of heat they require, he can discard together and try to get nearer the heat. If it is found in the morning that the droppings are well scattered under the hover it is an indication that the chickens have had enough heat. If the chickens are comfortable at night they will be spread out under the hover with the heads of some protruding from under the hover cloth. Too much heat will cause them to pant and gasp and sit around with their mouths open.

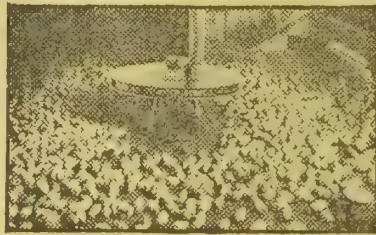
It is impossible to state for each case at what temperature the brooders should be kept to raise young chickens; however, it will run from 90 up to 100 degrees in some cases, as some broods of chickens seem to require more heat than others, an average being 93 to 95 degrees for the first week or 10 days, when the temperature is gradually reduced to 85 degrees for the following 10 days, and then lowered to 70 or 75 degrees for as long as the chickens need heat. This depends somewhat on the season of the year and the number of the chickens, as it can be readily seen that the heat generated by 50 chickens would raise the temperature under the hover to a higher degree than the heat given off by a lesser number, consequently the amount of heat furnished by the lamp or stove will have to be regulated accordingly. As the chickens grow larger and need

less heat, the lamps may be used only at night, and later only on cold nights. The heat is usually cut off at the end of 4 or 5 weeks in March or April in the vicinity of Washington, D. C., while winter chickens have heat for 8 or 10 weeks, or until they are well feathered. Care should be taken to prevent chilling or overheating the chickens, which weakens them and may result in bowel trouble.

Chickens need a cool place for scratching and exercising in addition to heat. Indoor brooders and hovers can be used successfully in unheated brooder houses except during the coldest weather in most sections of the country. Outdoor brooders usually have a cool compartment for exercising, where the chickens are fed in cold, stormy weather. If winter chickens are being raised, it is advisable to heat the brooder house to a temperature of 60 to 70 degrees, regardless of the temperature of the hover, which often require placing brooder pipes around the outdoor walls of the brooder house. The need of this heat depends entirely upon the brooding system and the weather conditions; but it is absolutely necessary that the heat be kept at the desired temperature under the hover. Brooders and hovers should have from one-half to 2 inches of sand, dry dirt, cut clover, or chaff spread over the floor and in the brooder-house pen. The hovers should be cleaned frequently, as cleanliness is very essential in raising chickens successfully.

When chickens are first put into the brooder they should be confined under or around the hover by placing a board or wire frame a few inches outside (this would not apply to the small outdoor colony brooders). The fence or guard should be moved gradually farther away from the hover

## The Fresh Air Brooder Stove



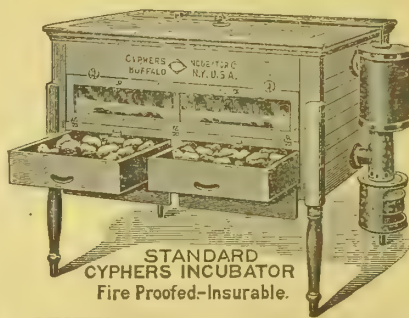
THIS is our NEW SELF VENTILATING BROODER STOVE. AUTOMATIC TO THE MINUTE. Economy's climax. No more crowding around the stove at night. HEAT EQUAL in all parts of stove room. Petaluma's severest critics pronounce this new wonder the peer of all brooding systems. Bank and our personal guarantee always. Get our latest catalogue. We can help YOU.

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50,000 WHITE LEGHORN CHICKS

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## COCKERELS FROM GREAT LAYERS

Higher grain prices necessitates greater production per bird. In addition to correct keeping and feeding the surest way to get more eggs is to breed from pedigreed cockerels which have 200 to 250 egg trap-nested White Leghorn mothers. Cockerels of this class sold at \$3 each.

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## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

**FRED A. JOHNSON**

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## ROCKS BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

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**FOR SALE CHEAP** — One Petaluma Brooder Stove, with pipe and gasoline tank, complete and in first class shape. JOHN R. MILLER, Lacey, Wash.

## Eggs are the Prizes We breed for.

Trapnested

**S. C. White Leghorns**

and

**Barred Rocks**

Day-old Chicks and Hatching Eggs Pedigreed Birds

**Blanchard Poultry Yards**

C. WESTERGAARD, Mgr.

Dept. H

HADLOCK, WASH



S. C. White Leghorn rooster heading first prize old pen at Tacoma and first prize cock at Walla Walla, 1915. Theo. Hews, judge, said this bird would have won at Chicago. Both Russel and Tucker, judges at Tacoma and state fair, also pronounced this one of very best which has appeared in any show during the past year. Bred and owned by Fred A. Johnson, Tacoma.



and discarded entirely when the chickens are 3 or 4 days old or when they have learned to return to the source of heat. Young chickens should be closely watched to see that they do not huddle together or get chilled. They should be allowed to run on the ground whenever the weather is favorable, as they do much better than when kept continuously on cement or board floors. Weak chickens should usually be killed as soon as noticed, as they rarely make good stock, while they may become carriers of disease. Brooders should be disinfected at least once a year, and more frequently if the chickens brooded in them have had any disease.

### FEEDING YOUNG CHICKS

Young chickens should be fed from three to five times daily, depending upon one's experience in feeding. Undoubtedly chickens can be grown faster by feeding five times daily than by feeding three times daily, but at no time should they be fed more than barely to satisfy their appetites and to keep them exercising, except at the evening or last meal, when they should be given all they will eat, says the U. S. poultry specialist. Greater care must be exercised not to overfeed young chicks that are confined than those that have free range, as leg weakness is liable to result in those confined.

The young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. The first feed may contain either hard-boiled eggs, johnnycake, stale bread, pinhead oatmeal, or rolled oats, which feeds or combinations may be used with good results. Mash mixed with milk are of considerable value in giving the chickens a good start in life, but the mixtures should be fed in a crumbly mass and not in a sloppy condition. After the chickens are two months old they may be fed four times daily, and after three months old three times daily, with good results. Johnnycake composed of the following ingredients in the proportions named is a very good feed for young chicks: One dozen infertile eggs or 1 lb. of sifted beef scrap to 10 lbs. of corn meal; add enough milk to make a pasty mash, and 1 tablespoonful of baking soda. Dry bread crumbs may be mixed with hard-boiled eggs, making about one-fourth of the mixture eggs, or rolled oats may be used in place of bread-crumbs. Feed the bread crumbs, rolled oats, or johnnycake mixtures five times daily for the first week, then gradually substitute for one or two feeds of the mixture finely cracked grains of equal parts by weight of cracked wheat, finely cracked corn, and pinhead oatmeal or hulled oats, to which about 5 per cent. of cracked peas or broken rice and 2 per cent. of charcoal, millet or rape seed may be added. A commercial chick food may be substituted if desired. The above ration can be fed until the chicks are two weeks old, when they should be placed on grain and a dry or wet mash mixture.

### KENT POULTRYMEN

#### ORGANIZED

The poultrymen at Kent, Wash., have organized for the purpose of standardizing their products and to get the entire output of a large number of egg farmers in better market-

able condition according to the "White River Journal."

The first year's venture is a grand success.

The gross business of the organization was \$51,550.81 in nine months on a paid up capital of \$2600, without the loss of a single dollar. The report showed that the Grangers' Warehouse Co. was serving 123 families from their two warehouses—one in Kent and one at Covington. Before a person can purchase from these warehouses they must be members of the grange in good standing. Further they are required to go to the warehouse for their supplies, pay for them at the time and take them home. Thus the warehouse has no delivery charges and but little bookkeeping expense, leaving the manager and his assistant, Mr. Gussenberger, free to attend to the business of the concern.

Four per cent is added to the cost of the supplies sold from the warehouse. One per cent. of this is used as a sinking fund for the warehouse company and three per cent goes to pay the manager and his employees.

The eggs are collected, graded and separated as to size and color, then put into cartons which have a label indicating the brand, quality and date. The highest market prices are thus obtained and when the market drops too much to suit the producers they are in better shape to store for a month or more, finding no difficulty to get liberal cash advances or warehouse receipts for which a nominal interest rate is paid. As the patrons make delivery both ways, the regular merchandising profit is easily cut in two.

### PRESERVING EGGS

Water-glass one part to about 15 parts of water will keep eggs in good condition for many months, when put in a cool place. Stone jars are the best receptacles.

#### Capacity

| Container | Eggs held | Water Glass required |
|-----------|-----------|----------------------|
| Gallons   |           |                      |
| 1.....    | 40.....   | 3 pts. 10 ozs.       |
| 2.....    | 80.....   | 7 pts. 3 ozs.        |
| 3.....    | 120.....  | 10 pts. 13 ozs.      |
| 4.....    | 160.....  | 14 pts. 6 ozs.       |
| 5.....    | 200.....  | 18 pts. 0 ozs.       |
| 10.....   | 400.....  | 36 pts. 0 ozs.       |

The eggs should be collected daily from only clean nests and from healthy flocks. It is preferable to use infertile eggs and thereby eliminate the possibilities for embryonic development and subsequent spoiling. In no case should old, sun-baked, cracked, or thin shelled eggs be used. Cracks are usually detected by gently tapping the eggs or candling them.

Water-glass appears to have modified the albumen to a slight extent, but not to such a degree as to be undesirable for food purposes. With the exception of poaching such eggs can be used instead of fresh ones for frying, boiling, scrambling, cooking, as well as various other ways. When it is desired to boil them, a pinhole one the blunt side of the egg should be made, because of the fact that the shell openings are all closed by the sodium silicate in this solution. Hence the pressure developed within the egg during the process of boiling causes the shell to break. In all instances, wash the eggs before using.

Poultry raisers are working for the stamped egg bill, requiring all foreign eggs to be stamped. Local poultry farmers will do well to send post

## CALL OF THE HEN

A most valuable work on poultry, the result of 25 years' careful experiment along the lines of selecting and breeding for high egg production. The illustrations so clearly indicate methods of procedure that any farmer having poultry can follow directions given and obtain results which will very soon more than pay cost of the book. The author, Walter Hogan, has a 1000 flock of 200-egg hens, from careful work of selection and breeding, proving his plan. The book has been approved by leading poultrymen all over the world.

It contains 126 pages, 52 half tones, 15 charts.

The retail price of this book is now \$2. For a short time we are making a special combination, profit-sharing offer to credit any purchaser of the book with two years' subscription to the Northwest Horticulturist & Dairyman, for the \$2. After a thorough examination of the book, if not satisfied return it in good condition and the money will be refunded.

Northwest Horticulturist & Dairyman

Box 1604, Tacoma, Wash.

## THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

### EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES  
SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK.  
Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.

THE TANCRED FARMS.

KENT, WASHINGTON.

cards to the state law makers at Olympia urging the passage of this bill.

It seems that when President Wilson let down the bars for the Oriental hen he forgot to put the bell around her neck.

## Facts and Figures

### STUMP PULLERS FOR

\$37, COMPLETE.

Today the stump puller is a part of the necessary equipment of every farm. In addition to pulling stumps, it has a hundred other uses about the place and the more portable it is, the more useful.

The local manager of the Kirstin Com-

pany stated, "It has remained for us to demonstrate that a stump puller might become a profitable investment for the small land clearer as well as the large. We maintain that even the man with but a single acre to clear, will find that it pays him to own a Kirstin. We make five different models that range in price, complete, from \$37 up, so that we can suit all needs. One acre cleared will, on the average, more than pay for a machine." Letters from men in every section of the Northwest, using the Kirstin machines, speak better for them than anything claimed by the Company.

**FOR SALE**—One potato planter, one digger. Both in use but one season. Good as new. Will make close price. J. R. MILLER, P. O. Box 45, Lacey, Wash.

### Baby Chicks 11 Cents Each

from the superior quality bred-to-lay OAK HEIGHTS STRAIN OF L. C. WHITE LEGHORNS

Safe arrival guaranteed. Two hatches each week. Free book on "Raising the Chicks."

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The Northwest's Largest Leghorn Farm and Hatchery

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## Kings

S. C.

REDS

Are noted for high yearly egg records, with low tendency for brooding. Adaptable — Profitable. Stock and Eggs for sale.

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We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

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### And How to Feed

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Brown Leghorn cocks and cockerels of the very best blood to be obtained in the northwest at \$2 to \$3 each if taken at once.

Are you in need of good stock to head your flock order at once.

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### GOOD LAYING

Vigor and cleanliness are essential always for good laying. How to bring this about at least expense and effort is explained in "Herculean" circulars, sent free to those who mention this paper and apply to E. H. ROMBERGER, Station F., Seattle, Wash.

Please mention this paper



THIS catalog truthfully presents and illustrates the most desirable varieties of seeds for

the Northwest. The best of everything for the market or home garden, the farm, the orchard, the poultryman and the bee-keeper. A reliable and safe guide to your purchases and a reference book which should be in the hands of every grower.

### FIELD CORN

Corn is now being grown successfully in the Northwest and careful tests have proven the following to be dependable and profitable varieties:

#### PREMIUM YELLOW DENT

Especially suited to Oregon and Washington, where it has grown successfully for many years. Early and hardy. Large full ears and foliage—makes excellent fodder.

#### HARTMAN YELLOW DENT

Grown in Oregon for 22 years. Heavy yielding corn, especially adapted to the Willamette valley. Early and very productive. Matures ears while stalk remains green.

#### MINNESOTA YELLOW DENT

A high altitude corn, especially satisfactory for ensilage. Fine large ears of bright yellow kernels. Vigorous grower with luxuriant foliage.

#### NORTHWESTERN "SNOKY" DENT

Another high altitude corn. Very early and a rapid grower, valuable for replanting. Useful where seasons are short. Prolific yielder.

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PORTLAND  
SEED CO.  
PORTLAND, ORE.





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In all parts of the Northwest are enjoying Franquette Walnuts produced on the trees sent out from our nursery.

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We have a few large trees yet to offer and while the price is greater than for small trees, they will bear earlier.

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Choice and Rare Evergreens.

Also the latest introductions in Roses, the kinds which afford the highest measure of satisfaction for planters in the Northwest.

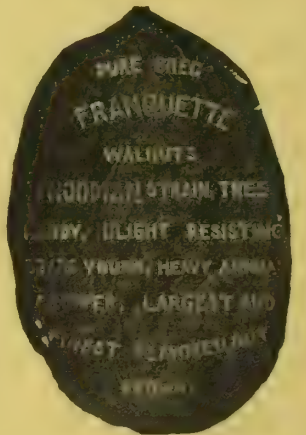
Our Rose Catalog is artistically illustrated and accurately described.

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Orengo, Oregon



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of only adaptable varieties and high germinating quality can planters afford to use. Our corn germinates over 96 per cent. Kale and other field, also garden, seeds are the kinds which give satisfaction. As early application as possible will serve our mutual interests best, for farmers cannot afford to take chances in crop production and in some lines supply is limited.

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# 1915 CATALOG

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TESTED  
SEEDS

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## Sunshine Lamp 300 Candle Power FREE

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Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

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We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED. SUNSHINE SAFETY LAMP CO. 214 Factory Bldg., Kansas City, Mo.



## AMERICA'S STRAWBERRY PLANTS

The best fall bearing strawberry bearing four months, a full crop first year planted, plants 35 cents per dozen, \$1.00 per 50 postpaid.

Write for rates on larger lots.

**J. KARLSON, HERRON, WASH.**

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# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH.,

MARCH, 1915

No. 3

## FRUIT GROWERS COUNCIL

After repeated efforts the Growers Council was organized at Tacoma last month. The object is to retain control of a majority of the fruit tonnage for the territory embodied, in the association in such manner that it can be standardized, properly distributed through satisfactory marketing channels, or stored when necessary to prevent overstocking markets, according to methods whereby the growers can realize on warehouse receipts or otherwise arranged to finance their industry.

In other words the fruit crops grown by the thousands of fruit farmers in the Pacific Northwest, through the Growers Council, will be made subject to the control of a central board in like manner as though the title of the entire output was owned by one party so far as its sale and disposition is concerned.

The Northwestern states were divided into ten districts with more to

man Butler, Hood River, and C. F. Haskell, Wenatchee.

W. H. Paulhamus, the general manager with many years experience has successfully built up the Puyallup and Sumner Fruit Growers Association until it is now a machine of great magnitude and power. He understands thoroughly the underlying principles for successful co-operation and possesses the grit and ability to carry into execution plans of far reaching effect. Tireless efforts, common sense and honor are basic elements in successful management here the same as in the European countries where co-operation, as the full meaning of the term implies, has become the watchword.

During the organization of the Growers Council some amusing things occurred. The selling agencies were set up as supposed enemies and in training guns on them it seemed to help some of the representative members of the growers to get into line.

reciprocity, and all wounds were skillfully healed. The central board of control was finally empowered to administer kicks in regular mule fashion if the management falls short of its duties but they can't chop off any heads for the manager, W. H. Paulhamus, has authority to convene the full council of fruit growers when that is deemed necessary.

The perfecting of the Fruit Growers Council organization is a very important event for the general welfare of every individual fruit grower of the Pacific Northwest as it will serve to create more dependable and wider markets and all our readers are interested in its success.

## FRUIT CONSUMPTION TO CONTINUE.

A thirty-five per cent drop in the average apple market in 1914 compared with 1913 was a stunner. But apple eating will not go out of date. more people have the apple taste

channel to the consumer.

It is to be hoped the purchasing capacity of the great consuming mass in the thickly populated districts may be increased by another year. The tide will not continue to run out, nor will the wheels of industry remain stationary. There will be a reaction, so let us keep the orchards in good shape. When planting more trees, set them further apart, specializing in at least two kinds of crops, for there is not the least doubt but fruit consumption will continue.

## COMMUNITY BREEDING DESIRABLE.

Community breeding is the watchword among stock raisers in the Pacific Northwest this year. Wm. Hyslop, head of the animal husbandry department Agricultural College, Pullman, Washington, has started the ball rolling. Will farmers endeavor to get together by groups, make a choice in class and breed and fix high ideals of type? That it pays is being demonstrated by Duroc swine breeders near Kennewick; Holstein breeders at North Yakima and Granger, by breeders of Jersey cattle in the Willamette valley, Guernsey breeders at Waukesha, Wisconsin, and in many other localities. In nearly every one of these instances the individual members are not only getting good results from their produce on the average local markets, but they benefit from the general demand for pure bred stock of the class and breed to which attention is being devoted.

## OPPORTUNITY AND DEMAND

The wheels of industry have the brakes applied from causes, perhaps, very far reaching. But the system of commerce is such that nearly the entire civilized world is affected. The clogging of wheels has taken effect in both large and small circles. Is there a remedy? An appeal is being made to the farmers throughout the United States to buy any needed article now. For example the price of meat has dropped and farmers are not getting good prices for their live stock, eggs and other products. If thousands of farmers will buy at once articles they must have in a short time, it will set many factories in operation, workman in the cities will then be afforded purchasing powers and the market for the farmers products will be stimulated. It will take concerted action on the part of many to make any showing, but every individual effort is a help. Let us all try to get the wheels of industry in motion again, affording opportunity for service, thus helping others we are helping ourselves.



Potato growing in the upper Yakima Valley, showing a yield of over 800 bushels per acre. Farmers will do well to improve in the general practice of growing potatoes or consumption will continue to decrease. It is safe to say that 75 per cent. of the crop grown in the Pacific Northwest last year was below good standard quality. Those who will grow nutritious tubers of ideal size and shape are in position for satisfactory market prices as well portrayed on another page in this number.

be added as required.

The Growers Board of Control consists of: John F. Davis, Opportunity, Wash., Clifford E. Chase, Wenatchee, Harry Jones, Wapato, A. D. Moe, Hood River, Oregon. E. S. Brainard Payette, Idaho.

Mm. Sackett, Corvallis, Montana. A. W. Summons, Freewater, Oregon, J. A. Westerlund, Medford, Oregon, and others to be selected. The executive Committee on whom will rest the responsibility of procedure is composed of W. H. Paulhamus, Puyallup, Chairman and Manager; Tru-

The shippers, handlers of fruit and representatives of selling associations present, took the situation good naturedly for they realized the dire need on the part of the growers to centralize and to assume control of their tonnage.

There was more or less friction in framing up for district representation. The question was on the voting strength of the amount of tonnage as against the number of districts represented but Dr. Henry of North Yakima, was well supplied with a soothing oil of courage, patience and

than ever before and the apple habit is likely to continue when the market is such as to afford a fair price to producers.

The problem of distribution from producer to consumer in a manner governing rates and prices fair and just to all interests, is being more accurately worked out. Next year will experience a big improvement over conditions existing in 1914 by means of the fruit growers council whereby the producers will retain control of their product standardized until it reaches the last stages in the



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C. A. TONNESON,

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Service is a privilege but most peo-  
ple do not object to some satisfactory  
measure of remuneration.

Wide awake farmers are aiming for  
as large a yield as possible of such  
standard adaptable crops as is most  
likely to bring satisfactory market  
prices.

## FINANCING PRODUCTIVE ENTERPRISES.

When farmers get together working  
harmoniously along some productive  
enterprise, financing themselves for  
the purpose, it will not be so difficult  
as many imagine. Community breed-  
ing, for example, organizing to stand-  
ardize and control some good sale-  
able product, the establishment of  
creameries on a sound basis, these  
operations are all being financed in  
the Pacific Northwest at the present  
time.

## LIME AND NITROGENOUS FERTILITY.

Farmers in the coast section find it  
comparatively easy to build up the  
nitrogenous elements in their soils  
by means of clover, peas or vetch  
crops and dressings of lime. Liberal  
applications of lime serves to liberate  
carbonic acid gas, a basic element in  
all plant food and the nitrogen fixing  
bacteria of the legumes seems to be  
more active where lime, adequate moi-  
sture and a growing temperature are  
all present. It is not too late to  
apply lime on clover lands this month  
nor in the berry fields or orchards  
of the coast section. Lime does not  
take the place of potash and phos-  
phate but wherever used together the  
one intensifies the good effects of the  
other.

## WILL EGG RAISERS CONTROL?

The wholesale egg merchants in  
Seattle attribute the sudden drop in  
the egg market there to the lack of  
control on the part of producers. Too  
many individual farmers were selling  
below market prices. The good early  
spring weather was favorable to a  
large egg production, purchasing ca-  
pacity on the part of many consum-

ers is limited, no doubt the cheaper  
imported eggs had some influence. As  
a result of these causes the market  
was depressed before it was consid-  
ered time to store. But the point is  
the admission on the part of the mer-  
chants that the producers should be  
in control of their egg production.  
Will the poultry raisers organize to  
place at least 75 per cent of the eggs  
raised in the Pacific Northwest under  
the control of a central board elected  
by themselves? If so, they can stand-  
ardize the product and have the priv-  
ilege in conjunction with the mer-  
chant to fix both the wholesale and  
the retail prices, and when the mar-  
ket is not satisfactory they can store  
and realize on warehouse receipts ac-  
cording to safe business methods.  
The question of control of the egg  
output is entirely a question with  
producers. Do you want it, if so  
get busy and organize for the pur-  
pose in a feasible manner. Who is  
the general to undertake the task?

## FRUIT-POULTRY COMBINATION.

The article on "Poultry Raising  
With Fruit Growing," on another  
page, by Mr. H. L. Blanchard, shows  
how apple, pear and berry growers  
of the Coast may keep up fertility of  
their soils by means of poultry as a  
side line. The fertilizer value of  
poultry is from 25 to 40 per cent.  
of the cost of their grain feed, so  
that fruit growers and poultry raisers  
who are skillful with good salable  
varieties of fruit, and attentive to  
the 150 to 200-egg-per-year type of  
fowls can hardly fail to make a pro-  
fitable showing during a term of  
years. Potash is an essential with  
fruit growing, and the Coast soils,  
as a rule, need more of it in avail-  
able form.

## EGG FARMERS.

High priced grain seems to fix a  
new standard of action for the egg  
farmers. Those with low egg record  
stock who buy all their grain are  
throwing up hands, while those who  
have good, dependable layers and  
raise a part of their grain feed con-  
tinue, and they anticipate an increas-  
ed reward for so doing.

## THE COUNTRY CREAMERY PROBLEM.

Some of the country creameries are  
up against competition both in the  
collection of cream and in the dispo-  
sition of their product. The remedy  
is organization by the country cream-  
erymen themselves for control of  
their manufacture. As much more  
than half of their entire output ton-  
nage as possible should be made sub-  
ject to the disposition of a central  
governing board of control represent-  
ing these creameries. It is very im-  
portant that product should be stand-  
ardized, which requires the work of a  
skillful inspector. Control of their  
own product by the country cream-  
eries will not come about until the  
majority feel the dire need of such  
action then it will not be a difficult  
matter of accomplishment.

## POTATOES FOR SOUTH AMERICA.

Information through the U. S.  
Department of Agriculture indicate  
there is some opening for potatoes in  
South America since the European  
war started. Shipments are best  
made in boxes of about 100 lbs. each

same style of package as is used  
in shipping to Alaska. The potatoes  
intended for the southern market  
however, must be entirely free from  
any blemishes, should be of even  
size, shallow eyes the kind which  
will cook up mealy.

It will be worth while for leading  
potatoe growers of the North Pacific  
coast to prepare a crop and make  
some endeavor to develop the sou-  
thern potato market. It is by giv-  
ing attention to these opportunities  
that producers develop foreign mar-  
kets worth while through the gradual  
building process.

## FILBERT PLANTING.

Filbert growing is receiving a little  
more attention each year but there  
is much room for expansion, both for  
pleasure and profit. It has been diffi-  
cult to obtain sufficient plants of de-  
sired varieties, but nurserymen on  
the Pacific Coast realizing the grow-  
ing demand will propagate the plants  
more abundantly.

The following varieties do well on  
rich clay loam soils of the coast sec-  
tion: Barcelona, White Avaline,  
Brunswick, Giantess de Hales and  
Chili du Cob. There are dozens  
of other varieties, but these are good  
enough, says Mr. Mason in Orchard  
and Farm.

As to distance apart not to be  
crowded, 12 to 15 feet is ample. If  
we study the natural habitat of the  
filbert (hazel nut) we find it growing  
in clusters in the forest where there  
is more or less shade and where the  
fallen leaves from the forest trees  
and other decaying vegetation form  
a mulch and add humus and plant  
food to the soil. And so, after the  
filbert tree has grown large enough  
to shade all the ground the better  
will the soil moisture be conserved.

Unlike the fruit tree that requires  
an uninterrupted sunlight to color the  
fruit, the filbert succeeds best in  
partial shade.

As to pruning, the filbert needs  
none, except to head back to twelve  
inches when the bush is first planted.  
We do not prune nut trees for the  
reason that the object in the life of  
a tree is to grow seeds. We prune  
peach trees, not to increase the size  
of the seed, but the pulp surrounding  
the seed. If you have to prune nut  
trees to remove dead branches caused  
by die back, you have selected the  
wrong place for your orchard.

While the filbert will stand a great  
deal of abuse and still persist, they  
will respond wonderfully to good  
treatment. The bush succeeds best  
in a deep, rich, clay loam soil, with  
an abundance of humus in the form  
of decayed leaves or straw and plen-  
ty of soil moisture. A partial shade  
is desirable.

## Adaptability and English Methods.

Speaking of this nut, Geo. C. Roed-  
ing in his Practical Planters Guide  
says; The pistillate or female  
blossoms compose a star-like tuft  
of crimson stigmas, pushing their  
way out in the young spring growth.  
The pistillate blossoms sometimes  
bloom later in the spring than the  
staminate blossoms, and in such  
cases it is necessary to supply pollen  
from other sources at the proper  
time, to secure a crop of nuts. The  
Hazlenuts make very attractive des-  
ert fruits and they have a peculiar,  
pleasing flavor found in no other  
nuts.

With so many sections possessing

climatic conditions favorable to their  
successful culture, there is no reason  
why they should not become of com-  
mercial importance on this coast.

In England, Filbert culture is a  
very important industry. In the  
County of Kent, famous for its Ken-  
tish Cobs, there are 10,000 acres de-  
voted to the culture of this most de-  
licious nut. There the shrubs are in-  
ter-planted between apple trees and  
it is a common sight to see the ter-  
minal branches extending into the ap-  
ple rows. In such orchards the culti-  
vation is all hand work. These im-  
mense shrubs, many of which are  
fifty years old, are trained with  
stems 18 inches high and many of  
them are of same diameter. The lat-  
eral branches radiating from this  
stem are trained by pruning and pinch-  
ing so that they are well supplied  
with numerous fruit bearing laterals,  
and the shrub has the appearance of  
a great punch bowl. The method of  
planting is fifteen feet each way, ex-  
cept where planted among orchard  
trees. The trees are carefully pruned  
in the winter and in July the tender  
growth is broken off, but never cut,  
as this has a tendency to send out  
too much new wood. A heavy calcar-  
eous soil with rocky substrata seems  
to be conducive to their highest de-  
velopment. The Cob is distinguished  
from the Filbert by being larger,  
heavier and broader, the Filbert is  
smaller, narrower and earlier.

## THE CARSTENS PACKING COM- PANY AND LIVE STOCK FARMERS.

The Carstens Packing Company,  
Tacoma, has now a large branch  
house in Spokane.

This firm affords a dependable mar-  
ket for any amount of cattle and  
hogs raised in all parts of the north-  
west. They would like to see the  
best of judgment displayed on the  
part of farmers in this section in  
regard to the raising and fitting of  
live stock. When feed prices go  
up many are inclined to rush the  
stock off to market regardless of  
condition and such has been the  
case the past few months. Those  
who will now prepare to grow a little  
more feed of anything adaptable to  
their locality and prepare to put hogs,  
or cattle in good condition for the  
next fall and winter season are likely  
to profit well thereby. Corn crops  
and silos are means of much encour-  
agement to stock raisers of the  
Northwest. The pea fed hog is very  
attractive to buyers in the fall.  
The firm is manufacturing some val-  
uable fertilizers which is being used  
by many local farmers.

## CACTUS HELPS SPRAYS.

It has long been known that cactus  
was a great help in making white-  
wash stick. Now it is found that it  
is an excellent thing to use with  
many poison sprays for the same  
reason. By using cactus in the spray  
material the poison stays on the  
foliage much longer and adds much  
to its value, according to U. S. De-  
partment of Agriculture.

The cactus is sliced to expose all  
the interior to the action of the  
water and is soaked over night.  
About 15 pounds of cactus to 50  
gallons of water is about right. Cac-  
tus grown on dry soil is better than  
that grown on moist. The cactus has  
about the same spreading power as  
whale-oil soap, but the lasting effects



are much greater. By the use of cactus a spray powder can be used with better effect than a spray preparation in paste form. Better results have been obtained in using one pound of zinc-arsenite in powder form with cactus than by the use of three lbs. in paste form to the same amount of water.

The cactus solution has a tendency to ferment, but this can be prevented by the addition of a little copper sulphate, salicylic acid or benzoate of soda.

### PRACTICAL PLANTING METHODS.

In his "Practical Planter's Guide," Mr. Geo. C. Roeding of Fresno, California, who is a recognized leader among nurserymen and fruit growers gives some valuable hints on preparations for planting which any prospective planter on the Pacific Coast will do well to heed.

It is of the utmost importance that the land be put in first class condition to receive the trees. This is accomplished by thorough plowing followed by harrowing until the soil is friable as an ash heap. Nothing is so beneficial to soil as sub-soiling, though planters are often deterred from incurring this additional expense, but where time and conditions will permit, it will do more to promote a fine deep root system and an unusually heavy growth, than any other thing that can be done in the preparation of the soil.

Where irrigation is practiced, grading must be resorted to, so that all spots will be accessible from the laterals running from the main ditch. Grading does not necessarily mean leveling, for the less the surface soil is moved the greater will be the ultimate success of the undertaking. No greater mistake can be made than to cut down the surface of the land for several feet in order to bring it under a ditch. It is far better under such conditions to pump the water from a ditch to the higher level and thus preserve the land. The slight additional expense of pumping will be more than counterbalanced by the

growth of the trees and their fruitfulness as compared to the poor growth and lack of fruit when the surface soil has been removed to any depth. Drainage should be given consideration, particularly if the land is low and liable to have water stand too closely to the surface during the spring and summer months.

### Blasting the Holes.

Much interest has been manifested of late years in dynamiting the holes prior to the planting of the trees. It is absolutely necessary to do this in hardpan soils in order to plant at all. On the Roeding place, we have a ten-acre tract in our 200-acre Calmyrna fig orchard in which the hardpan varied in depth from 6 inches to 2 feet from the surface. The trees in this orchard are now 12 years old. They have made a remarkably fine growth and have by far outstripped the trees in another part of the orchard growing on a sandy, loam soil.

It has been the practice not to blast where the hardpan came within 3 feet of the surface, but actual experience has demonstrated that not only striking and remarkable development in the growth of trees had been secured by blasting where hardpan was found, but in any soil of a heavy, compact nature. It does not take much of a stretch of the imagination to comprehend the fact that a thorough disintegration of the soil, permitting the roots to ramify in every direction, will promote a rapid root and top growth.

### SCHOOL CANNING

#### DEMONSTRATION.

T. J. Newbill, State Club Agent for Washington, reports that the school board at Prosser purchased a complete canning outfit as a result of one of his demonstrations, and that 500 boxes of windfall apples, which would otherwise have been dead loss, were canned during the vacation period for use in hotels, restaurants, logging camps, etc.

### TOMATOES IN COMMERCE.

Triumph of the Italian Tomato.  
The tomato was given to the world

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You May Have For

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We handle a large percent of the crop of the Willamette Valley and are prepared to take care of any sized orders. We save the very finest lots for our own trade and as we buy direct can quote at the very lowest prices. Write and tell us how much you need and we will quote prices.

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This valley produces most of the seed used on the Coast, and we are in a position to offer at the lowest prices and best grades.

### FARM SEEDS

We carry a complete stock of Farm, Field, Garden Seeds, Flower Seeds, and Seed Grain of all kinds, and are always glad to quote prices at any time. Our Catalogue is now ready; send for it.

D. A. White & Sons

Seedsman

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## ENCLOSED FIND CHECK

Merlin, Oregon, Nov. 9, 1914.  
I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50.

(Signed) H. E. THOMAS.  
"ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

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Successful Salesmen wanted.

FOR SALE—One potato planter, one digger. Both in use but one season. Good as new. Will make close price. J. R. MILLER, P. O. Box 45, Lacey, Wash.

### FRUIT GROWERS

Here is your chance to get some very choice trees at rock bottom prices, for we are compelled to remove all our stock from leased ground.

Do you want a bargain on some choice in trees, then send for our list of varieties and prices today.

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|-------------------------|----------|
| 10 in. long, 7 in. wide | \$10.00  |
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| 14 in. long, 7 in. wide | 12.00    |
| 16 in. long, 7 in. wide | 13.50    |
| 18 in. long, 7 in. wide | 15.00    |
| 24 in. long, 7 in. wide | 18.00    |
| 30 in. long, 7 in. wide | 21.00    |

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Plant a Walnut Grove that will grow into Dollars while you sleep. The Vrooman Franquette bears at three years and sells for 25 cents per pound—is smaller than an apple and sells for more money. Get in with the tide, and get rich. At forty feet apart, it only takes 28 trees to the acre. Is cheaper than an apple orchard to plant, and makes your land more valuable. True Vrooman Franquette Walnut trees at Bargain prices at

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WANTED—12,000 Marshall strawberry plants. H. HARRINGTON, Vashon, Wash.

### AMERICUS STRAWBERRY PLANTS

The best fall bearing strawberry bearing four months, a full crop first year planted, plants 35 cents per dozen, \$1.00 per 50 postpaid.

St. Regis Everbearing Raspberries (purple red), \$2.00 per 100; 50c per doz. prepaid.

Write for rates on larger lots.

J. KARLSON, HERRON, WASH.

Please mention this paper

GUERNSEYS — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.



by America, but Italy is to-day teaching the rest of the world by example how it should be raised and how it should be preserved. Italian canned tomatoes have practically pushed the American product out of the English market, and have gained an enormous market in the United States. The Italians raise a solid meaty tomato of fine color and it is so packed in the cans that the consumer is not obliged to pay for a large percentage of water.

Canned tomatoes, however, are put up principally for the export trade. The Italians themselves prefer their tomatoes in the form of sauce, or paste, which is nothing more nor less than boiled down tomato pulp, minus the skins and seeds, as set forth in an interesting manner in a report by Commercial Agent J. Alexis Shriver, entitled, "Canned-Tomato Industry in Italy," recently issued by the Bureau of Foreign and Domestic Commerce. This sauce is put up in cans and is used by the Italians in a great variety of dishes, of which spaghetti is perhaps the most familiar to Americans.

According to fairly accurate statistics the area planted in tomatoes in Italy is about 22,000 acres, producing about 385,000 tons. The exports to the United States amount to about 20,000,000 pounds of canned tomato and tomato sauce, and some 8,000,000 pounds of the product go to South

America. The total value of the tomato exports from Italy is well over \$6,000,000.

The skins and seeds that were formerly wasted are now utilized, the former as stock feed and the latter as a source of oil. The crude oil is suitable for soap making and for lamps, and the refined oil is said to be edible. Commercial Agent Shriver's report, Special Agents Series No. 93, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, at 5 cents a copy.

#### SULPHUR SODA SPRAYS.

The sulphur soda spray, according to A. L. Melander, entomologist State College, Pullman, is not so effective for destroying the San Jose scale as is the lime sulphur spray.

A drum of dry sulphur-soda contains about 64 pounds of actual sulphur, of which 43 pounds alone have insecticidal value. The remaining sulphur is combined in the form of sodium thiosulphate, which is the familiar substance known to photographers as "hypo," which has no killing properties, and which makes up practically half the weight of the sulphur-soda compound. Based on polysulphide sulphur, therefore, a drum of sulphur-soda should sell at \$4.30 to compare with a barrel of sulphur-lime at \$10.

## AGRICULTURE

## The Basis of Prosperity

### POTATO GROWING

Rotation for High Quality and Yield.  
By Lou D. Sweet.

Mr. Geo. Sinclair, Manager of the Earl of Roseberry's great Dalmeny Farm near Edinburgh, Scotland, the farm that is famous the world over for having produced the largest yield of potatoes ever recorded, says that on his farm "Potatoes always follow grass" and "There is no potato disease in Scotland if the crop is only grown every fourth year and on turf or sod ground." Similar methods of crop rotation have been practiced for years by the most successful potato raiser abroad, where crops or from 1200 to 1500 bu. are known, while both good yields and quality are maintained year after year.

Our method of rotation, which has proven very successful, is based on a six year period. The first year from 60 to 70 pounds of wheat, barley or oats are drilled in as a nurse crop for alfalfa, drilling the grain north and south, about three inches deep, and the alfalfa east and west so as to permit the sun to strike the alfalfa between the rows. We use about 12 lbs. of the best alfalfa seed and 5 lbs. of the best timothy, planting them about one or one and a quarter inches deep. The object of planting the timothy with the alfalfa is to obtain a hay, in the first cutting of each year, which will be a better balanced ration for horses than the straight alfalfa, and at the same time produce a better nest of plants which will cover the ground more closely, and give more humus when the field is finally plowed under. (Some farmers claim to get a better stand of

alfalfa by planting it alone without a nurse crop, but our experience has been that by planting as we do we get a very good stand of alfalfa and also a good crop of grain.) The second year we get three cuttings of alfalfa; third year three cuttings of alfalfa; fourth year two cuttings of alfalfa and plow under the third crop when it is about knee high and covering it about four or five inches deep, for green manure and to furnish humus for potatoes. Where alfalfa cannot be grown, clover or other legume can be substituted. Fifth and sixth years potatoes, then back to grain and alfalfa again.

The ground should be plowed to a depth of nine or ten inches, and then well worked over with a disk or spring tooth harrow to thoroughly break it up; a leveller should also be used to fill hollows and take down any ridges that may exist.

#### Good Seed Necessary.

When the soil has been properly prepared, the next essential is the use of good seed, planted whole, as practical experience in potato growing has demonstrated most positively that, in addition to suitable soil and proper cultivation, an absolutely indispensable essential to success is the use of good seed—that which is true to type of the variety to be grown, strong in vitality and free from disease.

Too much emphasis cannot be placed on this point, for, as long as Nature's laws remain the same, poor seed that is weak in vitality and diseased, will produce crops that are inferior in quality as well as in quantity.

#### Type Selection Essential.

No sensible stockman would think

## Clover Seed



VETCH, TIMOTHY, RYE, ETC.  
OVER 99 PER CENT. PURE

It is advisable to get orders in early as possible, as prices have upward trend.

Don't forget we handle CONKEY POULTRY REMEDIES, Conkey's Lice Powder and all of their Stock Foods.

BARTLETT'S Calf Meal, the perfect milk substitute.

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All sorts of Fruit and Ornamental trees and shrubbery. Our catalogue will tell you what to plant, and the price is right.

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## Seed Corn For Sale

From corn successfully grown and matured on my farm near Enumclaw, Washington, for the past nine years. Heavy yielder of good hard corn.

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Kennewick, Wash.



of trying to build up his herd of cattle by breeding only the poorest and weakest and sending the best to market, and yet that is precisely what most of the farmers are doing with their potatoes, when they ship out the best to market and plant only the culls and left overs for the new crop. Further, we know that in human beings as well as the lower animals, the one who is sound in health and strong in vitality is almost immune to disease, so, is it not reasonable to conclude, as experiments have fully demonstrated, that good pure seed that is true to type and strong in vitality should also be largely immune to disease.

The necessity for keeping seed potatoes true to type is strongly emphasized by the best growers, as in that way only can the variety be kept up to its highest and best development. Such seed will usually develop but one or two sprouts (if the first sprouts are not broken off) which will be large and strong and produce more market potatoes than a degenerate seed which starts numerous more slender sprouts; the latter is also likely to produce potatoes that are misshapen, mixed in color, and perhaps bitter in taste. In "The Potato" we read that Mr. A. Burns of Dumferline, Scotland, a remarkably successful raiser of enormous crops of potatoes, says, "If seed potatoes are put into storage before withering or greening, and if only partially matured when dug, only the terminal bud or eye develops. One sprout gives the best crop, and it is ten days or more earlier. There is no disease and no spraying." It is also stated of Sir Matthew Wallace, who was knighted for his successful work in the interest of the potato industry, that "He is very particular to keep seed true." And, also, with regard to using partially matured seed, "He claims that he gets less disease than when lifted at maturity, the potato throws out a less number of sprouts when planted, it makes a more vigorous growth, and the sprout is stronger. Consequently the crop ripens earlier."

#### Use Whole Seed.

Many tests and practical demonstrations on large fields have proven beyond question, that where whole seed, true to type, is used instead of cut seed, much better results are obtained, as the plants are more sturdy, thrifty, resist disease better, and a practically perfect stand is obtained, which is most essential to profitable results. No grower can afford to take a loss of from 20% to 30% in the stand, when it can be avoided by the simple expedient of using whole seed, as then all the nourishment in the seed is available for the plant as required, providing ample food until the plant's roots have become well started, whereas in the cut seed only a small amount of nourishment in the seed is available for the plant, and part of that is likely to be absorbed by the ground, while the cut side is also liable to infection from any disease that may exist in the ground.

The use of the whole seed has been the general practice abroad for many years, as they find that the extra cost of the whole seed as against the cut seed is much more than repaid by the greater crops harvested.

A recent experiment on the Western Slope, where whole and cut seed were planted side by side in the same field, was somewhat surprising. When the field was harvested, the part where the whole seed had been planted produced about 400 bushels per acre, while the part planted with the cut seed produced about 140 bushels per acre.

While the average production of potatoes per acre in the United States for the ten year period 1900 to 1909 was 91 bushels per acre, and that of Colorado for the same period was 130 bushels, some of the more careful growers are obtaining as high as 500 to 600 bushels per acre, and this largely increased yield is due to care in selecting and breeding potatoes for seed, as well as in the proper rotation of crops by which the land is maintained in a highly productive condition.

#### Method of Planting.

As previously stated, we grow our potatoes on land that has been in alfalfa for four years, the last crop of which was plowed under to supply nitrogen and humus. After treating our seed potatoes with corrosive sublimate, so as to eliminate any danger from scab or rhizoctonia which are always liable to exist to some extent, we then plant them whole in rows 3 ft. apart and hills 1 ft. apart. As an acre is approximately 210 ft. by 210 ft., this gives us about 14,000 hills per acre, whereas in some potato growing sections of the U. S. they cannot plant more than 5,000 hills per acre on account of the poverty of their soils. Because our soil has been built up by a consistent rotation of crops, and the turning under of the green crop has filled the soil with the humus and available plant food which potatoes require, we are enabled to plant 14,000 hills per acre, and have produced over 38,000 lbs. of potatoes per acre. Our normal field yields usually average between 400 and 500 bushels per acre, while this year one ten acre field produced an average of 623 bushels per acre. By the careful selection of only true to type potatoes for seed purposes, the quality of the potato is also improved.

For our planting we use an Iron Age planter, as it is the only planter we know of that will handle the whole seed satisfactorily. We find that the proper time for us to plant (at our altitude of 6300 feet) is May 5th to 10th, in a normal season. We usually plant about four inches deep. We start the cultivator about a week after the planter, cultivating about 8 inches deep. This is followed by a cross harrowing of the field, setting the teeth in the harrow at an angle of about 40 degrees, so as to level the ground as well as kill any weeds in the row. The field is then furrowed out and, as soon as necessary, irrigation is started. We usually irrigate twice and sometimes three times during the season, following each irrigation with a cultivation, (making each cultivation a little shallower than the one before) as long as the vine growth will permit.

#### Digging and Storing.

Our potatoes continue growing until the frost kills the vines, which usually occurs about Sept. 15th. We then allow the potatoes to lie in the ground and mature for about three weeks before digging so the skin will set sufficiently to stand handling.

After being thrown out by the Dig-

## Better Fertilizing Better Crops

BETTER FERTILIZING and the consequent better crops go hand in hand. To the thoughtful business farmer fertilizing is a profitable investment—a chance to turn his money over at a good profit which he would not lose.

For good fertilizer you cannot beat

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PORTLAND, OREGON



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every eye, my boy! It's  
the 100% POTATO  
PLANTER"

Every year there is a big lack of first quality Potatoes in the Northwest! Before you plant this year, make a study of the methods and machinery that will grow better spuds. That's the way to get top prices.

Every skipped hill is a loss—and every double a waste of expensive seed and marketable potatoes. Your extra profits on first quality potatoes in 1915 will pay for the—

## IRON AGE PLANTER

Practical men will tell you that other types of planters rarely do as well as 95% perfect planting—they are more likely to have 10%, 15% or 20% loss.

The "Iron Age" places every piece of seed exactly as you want it, without a miss or a double and without injury. The result is every hill is planted at the right depth, the right distance apart and covered level or rigid.

That means A Bigger Yield of First Quality Potatoes!

Mail the Coupon or Send a Postal Today for FREE Books on "Iron Age" Potato Planters.

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OLAF J. WINGREN,

LaConner, Wash.



ger, they are allowed to lie on the ground for half a day to thoroughly dry out, and are then picked up, placed one bushel in a sack so as to be easily handled, and taken to the cellars where they are placed in shallow bins with good ventilation. Later, when thoroughly matured, the potatoes are run over 2¼ inch screens, all the small, cracked, nobby or extra large ones are taken out, and the balance put up about 112 lbs. to the sack, which enables the sack to be neatly sewed up without leaving any opening. By this method the sacks usually contain about 200 potatoes, mostly 8 to 10 ounce in sizes, all smooth, shallow eyed potatoes, each one about right for a portion for one person; they are then ready to be sold as high class market potatoes.

#### High Value, Satisfactory Quality.

When thus assorted the potatoes are actually worth to the consumer nearly twice as much as a sack of ordinary potatoes, for the reason that there is practically no waste on account of small, cracked or misshapen potatoes, and because of the shallow eyes there is also very little waste in paring. The much finer flavor of good potatoes also makes their consumption a pleasure and a relish, where ordinary potatoes are simply tolerated because they are cheap and more or less nourishing.

Where potatoes are put up in this way it also makes it easier for the housewife, as, with one potato an ample portion for each guest or dinner, she knows just how many to prepare (when baked potatoes are served), being of the same size they will bake evenly, and there will be no left overs to be thrown away. Consumers soon realize the value of this arrangement and are quite willing to pay a substantial extra price for them. For example, our selected potatoes sell readily at the Beckwith stores in Denver, at retail for \$2.00 per cwt., whereas ordinary potatoes bring only from \$1.35 to \$1.55 per cwt. Such potatoes are also purchased by high class hotels, clubs, restaurants, and the dining car service of railroads, as they are a great convenience in the serving of patrons, and their use also eliminates a good deal of waste. For this high class service, however, potatoes must be of uniformly fine quality, good shape and with shallow eyes or they will not be accepted.

#### Good Seed, How Prepared.

For the production of seed potatoes it is best to have a separate seed plot, in which are planted only true type potatoes, about 3 ounce in size. These we plant in July, about the fifth, when the warm weather and the favorable condition of the soil, in which a large amount of plant food is then available, causes a rapid growth and usually a much larger set on them than is found in the regular field which is planted earlier in the season. On account of the short growing season, these seed plot potatoes will not grow as large as the earlier planted potatoes, but do produce a larger number of smaller ones, say 2 to 5 oz., which is the ordinary seed potato size, and these potatoes, being immature, have a larger vitality and resist disease better than potatoes which have fully matured.

For the breeding up of seed pota-

atoes to better and larger production, the best practice is that of hill selection. In this selection considerable dependence can be placed on the appearance of the tops. A large top with one sturdy stem, is usually found to have more and better tubers under it than a hill with one or more weak stems. Select those hills in which there are a goodly number of tubers, all of them of good shape and most of them of good uniform size, and discard those where the shape is poor and the sizes very variable, even though there may be quite a number of them. A potato will produce a crop like the hill it came from, rather than like itself, so it is very essential that one should know the kind of a hill a potato came from before using it as seed. Use these best selections for the new seed plot, and, in this way, by constant selection of only the best from year to year, the production is increased substantially while the quality and purity of type are fully preserved.

#### Attractive and Paying Methods.

As a result of the interest that our work in scientific agriculture has created, our ranch is visited every year by many farm experts, representatives of the Government and State agricultural departments, etc., and we have received many compliment on our successful demonstration that scientific methods bring the best results.

No intelligent farmer, if he gave the matter due consideration, would fail to adopt such correct methods of potato culture, which would give him a harvest of from 250 to 600 bushels per acre of good marketable potatoes, instead of the 90 to 125 bushels (more or less diseased) which he has heretofore obtained by ordinary careless methods and the use of culls and leftovers as seed, when, by correct methods, requiring little if any additional labor, and the use of good seed, this vastly improved result can unquestionably be obtained.

While the character of the soil is important in potato growing, the proper preparation of that soil, to bring it into suitable conditions for production of potatoes, is equally important, and this is best accomplished by a suitable rotation of crops which will give at least three years of alfalfa or other legume before the land is planted to potatoes.

#### DRAINAGE ON FARMS.

##### Locating the Tile Drain.

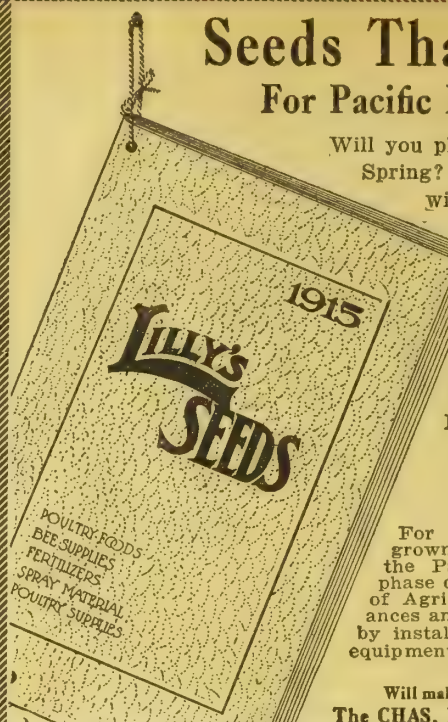
A system of tile drainage may consist of a main, submains, laterals, and sublaterals. The main is the drain through which all the water eventually flows. A submain collects tee water from the laterals and carries it to the main. A lateral is a branch drain that empties into a main or submain, while a sublateral is a branch that empties into a lateral. A system may contain all these parts or it may consist of only a main and a lateral. Sometimes only a single line may be necessary.

The farmer, knowing his land, the supply of labor, and his ability to finance a drainage project, is in a better position, says A. G. Smith, in Farmers Bulletin 524, U. S. Department of Agriculture, to decide when to tile-drain and where to locate the drains than any other person.

Fully 90% of the tile-drainage work

## Seeds That Make Good

### For Pacific Northwest Farmers



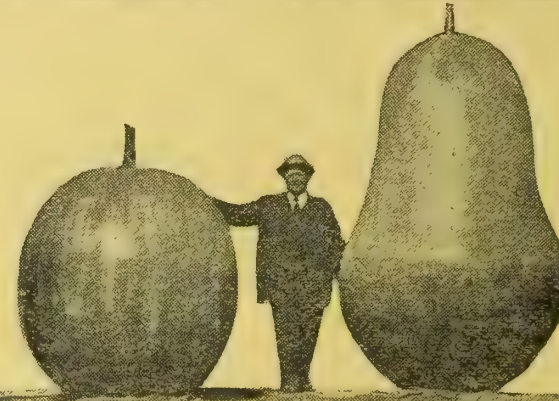
Will you plant tested acclimated seeds this Spring? Or will you plant dead seeds without knowing it? You have to gamble on the weather, but you need not guess on germination of the seed, because we have grown and perfected varieties of vegetable, flower, grain, and field seeds for this special location—THE PACIFIC NORTHWEST.

**LILLY'S Seeds are Tested for Germination and Purity**

For 30 years—since 1885—we have grown up with the farming interests of the Pacific Northwest and know every phase of it. We did not wait for the Board of Agriculture to compel us to give assurances and guarantees—we anticipated them by installing our own laboratories, testing equipment and experimental grounds.

**SEND FOR CATALOG FREE**

Will make buying at your dealers easier. Write  
The CHAS. H. LILLY CO., Seattle and Portland



**QUALITY FIRST**

**Quaker Nursery Trees are always "Best"**

*C. F. Lansing, Prop. Salem Ore.*

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

**C. F. LANSING, Prop. SALEM, OREGON**

# SEEDS

of only adaptable varieties and high germinating quality can planters afford to use. Our corn germinates over 96 per cent. Kale and other field, also garden, seeds are the kinds which give satisfaction. As early application as possible will serve our mutual interests best, for farmers cannot afford to take chances in crop production and in some lines supply is limited.

## Poole's Seed & Implement Co.

1507-9 Pacific Ave. TACOMA, WASH.

# Milton Nursery Co.

## Pear, Cherry, Apple, Prune and Peach

### Full Line Shade and Ornamental Stock

Quality in Nursery stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

**A. MILLER & SONS, INC.—MILTON, OREGON**

Salesmen wanted. A Catalog and Special Prices on Request.



in the United States has been done under the farmers own plans and directions. The plan that is widely followed in the middle Western States has much to recommend it. Here the farmer decides upon the drainage he wants, locates the drains, and then engages a surveyor or civil engineer to do the leveling.

Where it is possible to install a whole drainage system on a farm at one time it is by all means advisable. In actual practice, however, such a condition seldom occurs. Not many farmers have the money, time, or labor to do it all within a short period, or even within a year. Therefore most of the tile-drainage work must be done as it has been done in the past, a part at a time, until it is all accomplished.

#### Depth and Distance.

On stiff clay soils 2 to 3 feet is considered the best depth, and on black soils with joint clay subsoil, about 3½ feet is usually the depth.

For general farming purposes the laterals are placed from 32 to 70 feet apart and where the tile is laid deeper they are sometimes put 20 rods apart with good results.

For truck farming and on level ground it generally pays best to put them 40 to 50 feet apart to get early bacterial action and the spongy effect in the control of moisture.

#### BOOKKEEPING FOR CO-OPERATIVE ORGANIZATIONS.

Double entry bookkeeping is urged upon all farmers' cooperative societies in a recent publication of the United States Department of Agriculture, Bulletin No. 178, "Cooperative Organization Business Methods." The very life of a cooperative organization, says the bulletin, depends upon the confidence its members possess in it, and such confidence is impossible unless the records are unmistakably accurate. The double entry system is the only one which affords a complete check and should therefore be adopted in all cases.

Since the cooperative organization acts as the agent of the grower in marketing his product, the books of the organization must not only contain the usual records of any business enterprise, but must also show a clear record of each grower's shipments. The system must be sufficiently elastic to take care of the maximum volume of business at the busy seasons and at the same time be economical.

The six essential requirements for such a system are stated in the bulletin as follows:

- A complete set of financial records showing the business transactions and the results thereof.
  - A record of each member's transactions with the organization.
  - Capability of taking care of a maximum amount of business during the shipping season.
  - Capability of returning to the members the proceeds from their products within a reasonable time.
  - Clear pooling records when kept, so that any discrimination can be shown quickly.
  - Auxiliary records which will give statistics and valuable information for the conduct of the business. These record must be accurate.
- The necessity for providing a regular system for safeguarding the cash is also emphasized in this bulletin,

and nine precautions are given which it is said should be adhered to strictly.

(1) All entries of cash should be explicit, and items supporting such entries should be filed so that they are accessible for reference and verification.

(2) No entries should be recorded in the cashbook which do not relate to cash.

(3) The full receipts of each day should be deposited in the bank.

(4) All cancelled checks should be filed in numerical order.

(5) Duplicate checks should always be covered by indemnity bonds.

(6) Reconciliation should be made each month between cash or check register and bank pass-book balances.

(7) Permanent record of these reconciliations should be made.

(8) Checks, sales slips, receipts, etc., should be numbered with a numbering machine. Any which are spoiled should be marked void and left in the book.

(9) A regular system should be used for the acknowledgment of all cash sales, or miscellaneous cash items received.

The auditing of accounts also should receive more attention than is frequently the case. At least once a year an expert accountant should go over the books of the organization. To minimize the cost of this, small associations or circles can be formed by the organizations within a certain radius and a competent auditor can be engaged to do the auditing for all.

#### DISTILLERIES AND POTATOES.

Approximately 6,000 agricultural potato distilleries are now in operation in the German Empire. According to the U. S. Department of Agriculture. Many of these are co-operative distilleries in which it is interesting to note that the cooperators do not hold shares having a certain money value, but possess the privilege of calling daily for a certain quantity of spent mash. To the potato crop itself an eighth of the arable land in the German Empire is now devoted, and the production is enormous.

In some instances crops of more than 535 bu. per acre have been harvested, while yields of 300 to 375 bu. are quite common. Although such yields are produced only under favorable circumstances, it seems obvious that the total yields can be very considerably increased if new uses for alcohol can be discovered to create the necessary demand. At the present time in the eastern provinces it is the price of spirits which regulates the prices of potatoes.

#### GOOD ROADS

By Homer D. Wade.

Chairman Good Roads Committee,  
National Farmers' Union

No other citizen realizes the value of good roads as does the farmer.

A community can safely be judged by the kind of highways it maintains. The greatest chasm between the producer and the consumer is the mud hole.

Production must cease when the transportation costs eat up the profits.

There is something radically wrong with the farmer who is opposed to good roads.

Without good roads, there can be

## Headquarters for OREGON CHAMPION GOOSEBERRY

and Perfection Currant

Attractive prices made now for Advance Orders

Also a very complete line of general Nursery Stock, including a choice assortment of one-year budded and two-year Apple and Pear. Correspondence solicited.

## Portland Wholesale Nursery Co.

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Full of helpful suggestions to make your place beautiful.—It's up-to-date, instructive. Please mention this paper and write to,  
**J. B. PILKINGTON, Nurseryman**  
Portland, Ore.

*There's Dollars Under Your Stumps.*  
**GET THEM WITH A KIRSTIN**



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For every requirement a dozen models, just as fast or as powerful as you desire, and they are sold under the strongest guarantee ever written. Get my FREE book and learn how the KIRSTIN will pay for itself on a single acre. My SPECIAL LOW PRICES are still in force.

**A. J. KIRSTIN CO., 225 Com'l St., Salem, Ore.**

## FOR SPRING SOWING

We are ready to supply you with selected new crop seed. For over two generations we have built up a reputation for dependability. Our stock this year is fully up to the high standard we set, and we are better equipped than ever to serve you—and serve you well.

### Marquis Wheat

For Spring Planting.

This splendid new wheat won the \$1000 prize at the New York Agricultural Show as the best wheat grown on the Continents of North and South America. Won the \$3000 prize of the International Dry Farming Congress at Lethbridge, 1912, and the Sweepstakes at Tulsa, Oklahoma, Dry Farming Congress, 1913.

You should plant this earliest and heaviest yielding hard spring wheat—of highest milling and baking qualities. Price \$4 per 100 lbs., f. o. b. Portland.

NEW

### ODERBRUCKER BARLEY

A pedigreed strain of six-row barley, considered the earliest maturing and most prolific of all barleys. We offer genuine stock of our own growing.

Price \$2.75 per 100 lbs., f. o. b. Portland.

### Shadeland

Seed Oats for Spring Planting.

**MATURES IN NINETY DAYS.**

Won first prize at the Oregon State Fair every year since 1902. First at N. P. Land Show, 1913-14, over \$700 in prize money from one exhibit one season, at the big shows in the United States and Canada.

You Can Raise Twice the Crop on Half the Land.

**SHADELAND**

Challenge, \$3.25 per 100 lbs.

Eclipse, \$4 per 100 lbs.

Climax, \$4 per 100 lbs.

**F. O. B. Portland.**

For descriptions and planting information see general catalogue.

**1915 CATALOGUE** Listing all the leading varieties of grains, grasses, forage crops, etc., as well as all field and farm seeds, is ready for mailing, and if you have not yet received your copy you should write for it at once. Ask for catalogue No. 50.

## Portland Seed Co.

Portland, Oregon



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Of the Very Best Kind

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**PUGET SOUND SEED GARDENS**



**LA CONNER WASH.**



no development that will be permanent and enduring.

Bad roads keep children away from school and impair the efficiency of church work in a community.

The elementary principles involved in improved highways are social and domestic happiness and business economics.

#### The Split Log Drag.

The split log drag has contributed more toward the economic maintenance of public highways than any implement of modern usage. It does not require special acts of the legislature, bond issues nor expensive educational campaigns to make it available as usually precedes construction work. A drag can be built or purchased for twenty dollars and is easily operated by any one who can drive a team. We need more drags in this state.

#### FARM FACTS

By Peter Radford, Lecturer National Farmers' Union.

There is not enough of the community spirit among our rural districts.

Success in farming depends largely upon proper marketing methods, cheap money and co-operation.

Something is wrong in our marketing system when a small crop brings more money than a bountiful one.

Co-operation between practical farmers and proficient business men will eliminate ignorance and prejudice.

The highest duty of state and Federal Governments is to place agricultural education within the reach of all.

The farmer cannot be helped until he organizes, and the Government can best help the farmer through organization.

By co-operating with his neighbor the farmer can learn new methods of culture and the interchange of ideas will benefit both.

The Nation's menu must be made up from the fields, pastures, orchards and gardens, and to farm intelligently the farmer must know what is needed.

#### Cheap Money.

Cheap money is the fount that makes the brook of industry flow and without it the homeless farmer can hardly hope for a home or the manufacturing industry expect to prosper. The farmers of the United States owe \$5,000,000,000 and cheap money will mean millions of dollars in saving to the farmer.

#### EFFICIENCY IN FARMING.

##### Measured by Labor Income.

The term "labor income," so widely used as a measure of efficiency in farming, is very confusing to those who are in the habit of estimating profits in percentage of capital invested. The following illustration will make clear the relation between the two methods.

On a particular Indiana farm the capital invested was \$20,716. The gross receipts for the year were \$2,163 and the expenses were \$878, leaving a net farm income of \$1,285. Now this \$1,285 represents what the farmer got for his labor and the use of his capital.

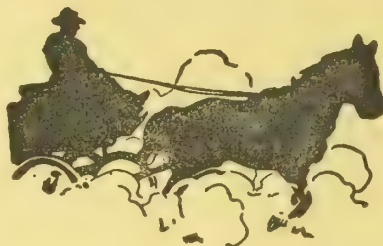
In most industrial enterprises every one, including the head of the enterprise, receives a definite salary, and

this salary is fixed by the law of supply and demand; hence net income is all credited to capital and is expressed in percentage of his capital. But the farmer has no fixed salary. The question arises, therefore, what proportion of the \$1,285 shall be credited to the farmer's labor and what proportion to the capital invested. There are clearly two ways of answering this question. One would be to estimate a fair wage for the farmer, say \$325 for the year, and credit the remaining \$960 to capital. The percent of profit would then be found by dividing the \$960 by one percent of the investment of \$20,716, which gives 4.6%. This is the usual method of expressing profit in industrial enterprises where every employee, including the head of the firm, receives a wage or salary.

The difficulty in applying this method in farming lies in determining what is the value of the farmer's services. This difficulty has been met by assuming that his time is worth what he can make the business earn over and above a fair rate of interest on the investment. If this rate is 5%, then \$1,035 of the net income of \$1,285 represents interest and the remainder, or \$249, represents the farmer's labor income. Labor income is thus simply what the business earns over and above a fair rate of interest on the investment—D. A. BRODIE.

#### WHEAT SHORTAGE NOT LIKELY.

The 1914 wheat crop of the United States was estimated to be 891,000,000 bushels. The estimated surplus carried over from the 1913 crop was about 76,000,000 bushels. There was, therefore, a total available supply of 967,000,000 bushels. As the normal annual per capita consumption of wheat in the United States is



Sweat and dust are two of leather's worst enemies. One eats the leather fibre while the other cuts it with every movement the horses make.

#### EUREKA HARNESS OIL

saves the life of your harness. Leather is fairly honey-combed with pores. Eureka fills them, keeping out dust, sweat and moisture. It keeps your harness new. An occasional application does the business—an easy task, but one that saves you the cost of many a good set of harness. Dealers everywhere.

Standard  
Oil  
Company  
(California)

# Profit by the experience of others

It has been demonstrated time after time that no other material can take the place of burned clay Drain Tile. This material has been through the fire as part of the manufacturing process, and as a result, is not affected by bog and other destructive agencies.

When you are in need of Drain Tile, specify burned clay Drain Tile.

|              | Weight per ft. | Per Thousand ft. |
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| 3-inch ..... | 5½ lbs.        | \$15.00          |
| 4-inch ..... | 7½ lbs.        | 20.00            |
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Free on board cars, Seattle. Minimum carload, 30,000 lbs.

Ask us for pamphlet, "HINTS ON FARM DRAINAGE." It's free.

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# PEAS Heaviest Yielding Peas Grown. Highest Priced Field Pea

KAUFMAN'S PROLIFIC, SHORT VINED, HAND PICKED BLUE BELL PEAS

\$240 PER ACRE. (Over 28 tons from 14 acres; was offered \$120 per ton) RECORD CROP OF PEAS!

Write for price list and circulars (used as supplementary reading in many High Schools).

Also Garden (Table) Peas

**W. H. KAUFMAN** Bellingham, Wash.

## LIME YOUR SOIL

The same work, the same investment in time and money on limed soil will double your crops and the best form of lime to use is

**FERTILIME**  
TRADE MARK

Because it is lime in the most concentrated form, specially prepared for agricultural purposes and will give immediate results. Mixed with other fertilizers or manures, the effect on soil and crop is wonderful. Contains over 70% Calcium Oxide.

Send sample of your soil. Write for prices and Lime Bulletin.

**F. T. CROWE & CO.**

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**GROUND LIMESTONE** Greatly Reduced Prices  
on carload lots delivered  
to your railroad depot

Full Line of Commercial Fertilizers

## MONTE VISTA NURSERIES

**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nellis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

**A. HOLADAY SCAPPOOSE, OREGON**



about 5.3 bushels, 520,000,000 bushels should meet our normal domestic requirements for food; in addition, 90,000,000 bushels are required annually for seeding. 610,000,000 bu. therefore, should supply the normal domestic demand. This would leave a surplus of 357,000,000 bushels. Of this surplus about 210,000,000 bu. were exported by January 30. This left 147,000,000 bu., or 40,000,000 bu. more than our average annual export for the past five years, for export between February 1 and the appearance of the new crop, or for carrying over into the next crop year. The amount is sufficient to permit the export of nearly 1,000,000,000 bu. a day until July 1, before which time the new crop will begin to be available. This is about the average exportation.

#### Compared With Other Products.

Wheat does not constitute more than 12 per cent. of the normal diet, about the same as poultry and eggs. Meat and dairy products constitute 48%; vegetables 11%; fruits, nuts, sugar, fish and other items, the remaining 19%. There are larger supplies of corn and other grains, meat animals, dairy products, potatoes, and fruit at the opening of 1915 than for many years. The most important competing products are corn and potatoes. This is shown by the fact that while the normal consumption of wheat is 5.3 bushels in Maine it is only 4.7 bushels, and in Michigan, 5. In the wheat growing states where wheat is abundant, such as Minnesota, the average is 7.2, whereas in the South, where corn is much used, the average is 4 bu. Normally about 3% of the corn crop is consumed as food. Of our total crop, about 80 millions would be used for food, the remainder for other purposes. The remainder could be used for food and substitutes used for animals. The potato production in the United States averages 3.8 bu. per capita. This year the available supply is 4.1 bu. The average price of meat animals was 7% cheaper in January than a year ago, butter 2% lower, the price of chickens slightly lower, of potatoes 35% lower; and of apples it was 37% lower.

#### PREPARATION OF SEED BED FOR CORN.

A large number of farmers in Washington are planting a few trial patches of corn. Many of these will fail in their summer's trial, largely because the seed bed has not been properly prepared. Geo. Severence, Agriculturist of the State Experiment Station at Pullman, gives the following recommendations: The growth of the young plants will depend largely upon the supply of food they secure, and that this food is secured through the root system of the plant. It is necessary, then, that the corn plants make a rapid and complete development of this feeding system.

The root system is extremely delicate, and contains such an immense number of small rootlets and root hairs, when properly developed, that no space, even as small as a pea, can be found in the upper part of the soil that does not contain some of these root hairs. For such development it is necessary that the roots do not come in contact with hard clods. The entire furrow under the mulch should be thoroughly pulverized.

Where the land has not been plowed until time to plant corn, nor the surface disked to hold the moisture, the furrow breaks over in chunks. If the surface is then worked only with a smoothing harrow, the bottom of the furrow where this root system must develop is in no condition for proper root development. Soil in this condition at the time of plowing should be disked before plowing, and be worked with some form of compacting and clod-mashing tool after being plowed and disked, in order to work the soil deeply enough.

Every root hair should come in contact with soil grains, hence the furrow should be well worked down, leaving no large holes, as is usually the case with late plowed land, particularly if considerable straw, stubble, or other trash has been plowed under.

This is also necessary in order to insure a good supply of moisture. The presence of large air spaces permits the rapid drying out of the soil, and breaks the capillary connection with the soil moisture beneath, so that the young plants in the seed bed are deprived of the moisture they must have.

Many farmers reason that because the corn is a cultivated crop they may save time by planting and fitting the ground latter. This is entirely wrong.

The first growth of the plant is from the limited amount of food supply stored in the seed. This will keep the plant but a few days. It must then draw its food from the soil. If the young, delicate plants are to make a vigorous growth from the start, the roots should find the soil in proper condition at the outset to enable them to develop quickly and extensively, so that there will be no check in weaning from the mother seed.

Furthermore, the future cultivation does not fit the soil directly about the hill where the plant in its tenderest stage is obliged to draw its food.

If the ground is to be properly prepared for corn, it should have been plowed last fall so that the moisture may have been completely absorbed, and the furrow settled by the winter rains. This has the further advantage of letting the weeds start in the early spring, so that they can be largely cleaned out before the corn is planted. It also encourages the development of valuable food.

If the land is not fall plowed, the next best thing is early spring plowing. (After which the disk should be used several times. Ed.) But whether plowed in the fall, early spring, or late spring, the fact must not be overlooked that the seed bed must be thoroughly prepared before planting if complete success is expected.

#### CULTURES FOR INOCULATING LEGUMINOUS SEEDS.

In distributing cultures for inoculating leguminous seeds, the U. S. Department of Agriculture has determined to adhere to last year's practice and to limit the supply that will be sent to one planter to two bottles. Each bottle contains sufficient culture to inoculate thoroughly 1 bushel of seed. The limitation is made necessary by the probability that the funds available for the distribution of cultures will prove inadequate to furnish

## THE "K" HAND POWER STUMP PULLER WILL PULL ANY STUMP 1 INCH

### STEEL CABLE WILL HOLD



Mr. H. G. Hunzicker, of Foster, Wash., pulling a 24-in. deep rooted fir, single-handed.

### The "K" Hand Power Stump Puller

Is the stump puller that does not need a team of horses and a crew of men to operate it.

The power is in the machine—with it you can outpull 16-horses. It is built to clear land cheaply—to make stump pulling a one-man, spare time job. Weighs but 171 lbs., one man pulls 96,000 lbs. Your stump land is wasting money—stop the waste by investing in a "K," and your cleared fields will put money in the bank for you.

The "K" is made of Krupp Steel, with case hardened wearing parts. Simple. Compact. Powerful. Works on any kind of land, at any angle. **Used by U. S. Government in Alaska,** and by many States and Counties, and hundreds of land owners in all parts of the country. Comes complete, ready for work, with 200 feet weatherproof English cable. No extras to buy.

My new free book on land clearing shows why the "K" is the cheapest way. Write for it today, and for the limited time special money-saving offer.

WALTER J. FITZPATRICK  
Box J—1926 Second Ave., Seattle, Wash.

## Christopher Nurseries

WHOLESALE and RETAIL

Nurserymen for Four Generations; 25 Years in Present Location

From this experience we are producing stock which afford planters the very highest measure of satisfaction; carefully grown, free from disease. Varieties complete of **APPLES, PEARS, CHERRIES, PLUMS, PRUNES**, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

**ORNAMENTALS**—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce.

**JOHN A. STEWART & SON, Christopher, Wash.**

## More, Better and Larger Fruit

Will be produced by your orchard the coming season, and a better market will be yours if you will spray your trees and fertilize your soil with

## Nitrate of Soda, King of Fertilizers,

Which contains 15 per cent of nitrogen, the food which is the soil's "Staff of Life." It will produce tremendous results at small expense.

Write us for literature telling you what it will do and how to use it. Address Dept. A.

**NITRATE AGENCIES CO.**  
**LEARY BUILDING SEATTLE**

## \$82 A WEEK EARNING CAPACITY

### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment

Will saw 20 to 40 cords of wood per day at a cost of \$1.00. **PULLS ITSELF** up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for **FREE** catalog containing full description with testimonials from enthusiastic users. **WRITE TODAY.**

**Reierson Machinery Co.**

SOLE MANUFACTURERS

PORTLAND, OREGON





them in unlimited quantities.

Planters who have had no previous experience in the use of cultures and do not understand exactly what methods are necessary for successful seed inoculation should write to the department for information and for application cards. All requests for cultures must be transmitted upon these application cards. Preference will be given to advance requests, and farmers are urged to apply to the department for the culture at the earliest possible date, and at least two weeks before the probable date of sowing the seed.

### MAKING ACID PHOSPHATE.

#### Important in the Fertilizer Industry.

The manufacture of acid phosphate has come to play such an important part in the fertilizer industry of the United States that the Department of Agriculture has just issued a bulletin (No. 144) on the subject, which is designed both for manufacturers and for progressive farmers.

Phosphate rock, it is said, has almost entirely displaced bone, guano and apatite as a source of phosphoric acid and a knowledge of the exact composition of the rock is of importance because not only the phosphate of lime but all the impurities as well are acted on by the sulphuric acid used as a reagent and influence the finished product.

Of all the impurities occurring in phosphate rock, compounds of iron and aluminum are the most dreaded. Even in small quantities these elements are apt to cause a certain amount of reversion and in large quantities may render the product

sticky and unfit for use. By careful handling, however, phosphate high in iron and aluminum compounds may be made to produce high-grade acid phosphate. On the other hand carbonate of lime is rather desirable when the quantity is not excessive.

### GOOD ROADS FROM NATIONAL STANDPOINT

It is estimated the total quantity of commodities hauled over rural roads is 700,000,000 tons annually, costing now an average of 21 cents per ton mile or \$1.89 per ton for an average of nine miles.

The report expresses the opinion that such an improvement as is now practicable, would result in the saving of 8 cents per ton-mile, or a total of \$504,000,000 annually. Viewing this saving as a dividend, the report says that it would justify, on a 6 per cent. basis, an investment of \$8,400,000,000, which the Committee believes is far more than would be necessary to place the roads in such a condition as to effect the saving indicated. Other excerpts from the report drawn by Hon. Jonathan Bourne, Jr., are as follows:

"We believe that when the United States Government undertakes so important a problem as that of Federal aid to good roads, it should undertake it in a large way. To undertake it in a small way means a continuation of the policy of patchwork and consequent waste of funds, with slight permanent results to show for the expenditure, and would within a very few years, subject Congress to the criticism of having established what is commonly called a 'pork barrel,' from which the several states

would receive annually a small contribution of funds distributed over a large mileage of roads without producing the high class of public roads which are so much needed and desired. We believe that before Congress adopts a plan the whole subject should be so thoroughly studied that the plan decided upon may be enacted into law with confidence that it will remain practically unchanged on the statute books for many years to come, thus standing for many years as a credit to the Congress which enacted it."

#### Cost of Maintenance.

Well-constructed gravel roads will sometimes sustain several years of traffic without showing marked deterioration, even when there has been no maintenance. Such roads some-

times even improve during the second season; more frequently, however, they show ruts or the formation of chuck holes. It can not be expected that the average life of a gravel surface will be greater than that of a macadam surface. The average interval for resurfacing macadam roads is between six and seven years. If a sum equal to two-thirds of the original cost of the gravel surface itself is provided for renewals at six-year intervals, it should be estimated at from \$150 to \$250 per mile per year. If \$30 is then allowed for annual dragging and small repairs, the total cost of repair and maintenance of gravel roads would be from \$180 to \$280 per mile. The annual cost of strict maintenance is sometimes below \$30.

## IRRIGATION

Adequate, available moisture at all seasons.

### GRASSES FOR IRRIGATED LANDS.

Bulletin No. 80 of the University of Idaho, by J. S. Welch, gives the following summary on grasses.

Irrigated grass pastures produce returns that warrant their use even on comparatively high priced land.

Of all the grasses tested, Kentucky Blue Grass, Smooth Brome Grass, Orchard Grass, Timothy and Meadow Fescue have proved the best.

White, or Alsike Clover, is desirable in a very small proportion. More than three or four pounds per acre may cause bloat.

Mixtures give better results than any variety seeded alone.

Different conditions require different mixtures.

A total of about 28 pounds of seed per acre is necessary.

Seed should never be bought in mixtures.

Thorough seed-bed preparation is absolutely essential.

Grasses can be seeded any time from early spring to the middle of July.

Fall seeding is not advisable.

Broadcasting the different varieties separately is the most satisfactory method of seeding.

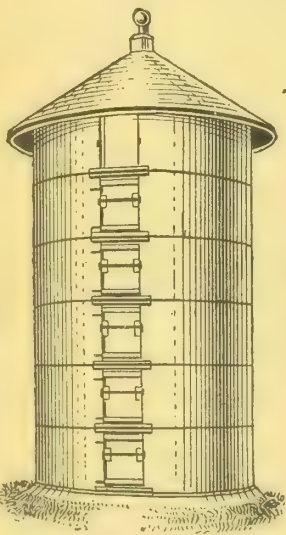
The seed should be covered with a

# THE Weyerhaeuser FIR SILO

## HAS MADE GOOD

The best argument in favor of any product is that it has **MADE GOOD**—that it has been put to the test of usage and met every requirement in a satisfactory manner.

The WEYERHAEUSER SILO has long passed the experimental stage. It **HAS MADE GOOD** and **IS MAKING GOOD** for its owners every day. Our strongest argument is that every owner will recommend it to you.



#### Points in Favor of the Weyerhaeuser Silo:

1. Its air-tight construction means perfect ensilage.
2. Scientifically designed and guaranteed anchorage system.
3. Perfectly balanced, easy-to-swing, air-tight doors.
4. Safety tread ladders.
5. Specially rolled steel hoops, thoroughly tested.
6. Specially designed, SELF-ADJUSTING roof.
7. Staves made from air-dried Douglas fir in the largest silo factory in the Northwest.
8. The guarantee of the largest lumber company in Washington.

#### THE WEYERHAEUSER SILO IS MADE RIGHT

From the wind-proof anchorage system to the easy-swinging air-tight doors, the WEYERHAEUSER SILO is scientifically designed and perfectly made. It is made **RIGHT** and to **STAY RIGHT**.

#### FIRST COST IS LAST COST

There is just one cost to WEYERHAEUSER SILO—the first cost. It is made to **LAST**. There is no constant out-go for up-keep and it will out-live its owner. And best of all it pays for itself in saved crops, healthier cows and cheaper and sweeter milk.

Write for Free Silo Book

#### Agents for the Weyerhaeuser Silo:

- MR. ROBT. BURT, General Agent, 1009 Western Ave., Seattle.  
CLEAR LAKE LUMBER CO., Agents Skagit Co., Mt. Vernon and Sedro-Woolley, Wash.  
ROYAL DAIRY CO., Agents Whatcom Co., Bellingham, Wash.  
GLENDALE CREAMERY CO., Agents Jefferson and Clallam Counties, Port Townsend, Wash.  
ST. PAUL & TACOMA LUMBER CO., North Yakima, Wash., Agents Benton and Yakima Counties.  
JOHN H. GIBLIN, Chehalis, Wash., Agent for Lewis County.

**WEYERHAEUSER LUMBER COMPANY, Everett, Wash.**



spike-tooth harrow or good brush drag lightly.

Under average conditions a nurse crop should not be used.

Irrigation water should be applied by the corrugation method during the first season, thereafter flooding between borders is recommended.

The pasture should have frequent irrigation and during the entire season should receive a total of about two and one-half acre-feet per acre.

Early seeded pastures can be grazed lightly late in the first season.

The pasture should be divided into at least two parts and should not be grazed too closely.

Barnyard manure can be used on the pasture with good results.

Some shade should be provided for the animals.

Grazing tests at the Station indicate that an acre of good mixed grass pasture will maintain two good dairy cows or three medium sized beef steers during May, June, July, August, and part of September.

## WATERING AND IRRIGATING.

### By Use of Rams.

During the past few years a number of farmers in the coast section have been installing rams for raising water for domestic use and in some cases serving most satisfactorily for irrigation.

The Hill Hydraulic Machinery Company, of Seattle, who have perfected and are manufacturing what is known as the Sterling ram, one of the most successful on the market, recently received the following communication from one of their numerous patrons:

"The Sterling ram I bought of you is working very satisfactorily. No repairs required except to see that the washers are thick enough to regulate the waste valve, nothing else done to the ram the past four months. It has been running all the time and is in as good condition as at first. The Sterling ram I believe is superior to all others."

H. S. SINKAN, Kent, Wash.

Feb. 14, 1915.

This ram works on a 37 foot fall making a 295 foot lift, sending water through 2400 feet of  $\frac{3}{4}$  inch pipe, at the rate of about 1000 gallons a day. The cost of the ram was \$25 besides all the piping necessary.

Among others who have installed the Sterling rams are:

Mr. Stockand, Center, (Jefferson County) Wash.; a No. 2 ram working in a fall of 4 feet, lifting water 52 feet and delivering 1400 gallons per day. Mr. John Zarth, Vashon; a No. 3 Sterling ram, working in a fall of 11 feet, lifting water 250 feet, both for family water supply and for irrigation use. Mr. C. B. Hopkins, Anderson Island, Wash.; a No. 3 Sterling ram, working in a fall of 8 feet, lifting water 40 feet both for family supply and for irrigating purposes. Mr. Geo. L. Stoltenberg, near Roy, Wash.; a No. 2 Sterling ram doing satisfactory work. Mr. C. H. Newcomb, Ellisport, Wash.; a No. 4 Sterling ram working in a fall of 10 feet, lifting water 140 feet for family use and for his green houses. Mr. D. McInnes, Dungeness, Wash.; a No. 3 Sterling ram working in a fall of 12 feet lifting water 120 feet for family supply and for live stock use and garden sprinkling purposes.

There are numerous places where water may be obtained from a running stream and lifted by means of a ram at a very nominal expense other than necessary piping to cover distances and even the expense to convey a considerable distance may be overcome by the increased value of any truck or fruit crop which can be grown.

During the months of June, July and August is when there is good temperature for plant growth in the Coast section and too often the rainfall is not sufficient to produce bumper yields.

### WATER RATE ON SUNNYSIDE.

The Secretary of the Interior has just issued the following notice:

1. Notice is hereby given that the annual operation and maintenance charge for lands under the Sunnyside Unit, Yakima Project, Washington, receiving water by virtue of supplemental water right contracts with the United States, is hereby fixed for the season 1915 and thereafter until further notice, at one dollar (\$1.00) per irrigable acre, due and payable in advance on March 1 of each year.

2. If such charge is unpaid on April 1 following the date when due, an interest charge at the rate of one-half of one per cent of the amount unpaid will be added thereto, and thereafter an additional charge of one-half of one per cent of the amount unpaid shall be added on the first day of each calendar month, if such charge with interest shall remain unpaid; and no water shall be delivered to the lands of any owner who shall be in arrears for more than one calendar year for the payment of any charge for operation and maintenance.

### EXPERIMENTS ON UMATILLA PROJECT.

"Soil and climatic conditions prevailing on the Umatilla reclamation project were considered by the reclamation service to be better adapted to the production of fruit than to other crops. As a result of this early decision, the land was divided into small units with a view to the development of small intensively farmed fruit and garden tracts." The foregoing is a quotation from the report of the Umatilla branch experiment station, made by Superintendent Ralph W. Allen and issued by the Oregon Agricultural College Experiment Station under the direction of Director A. B. Cordley.

"The predominating soil type on the Umatilla project, upon which the station is located, is sand, ranging in texture from coarse to fine. Approximately half of this area is of coarse sand and the remainder ranges in character from medium to fine. The higher land that lies back from the Columbia river is mostly of finer texture. The soils are markedly deficient in organic matter and nitrogen. The physical character of this land renders the duty of irrigation water very low. From a soil standpoint, the correction of these two difficulties, which are among the principal factors influencing crop production, is of the utmost importance.

"Climatic conditions of this district are very congenial for crop growth. They are a rare combination of dry atmosphere and dry weather. The effect is comparatively long growing seasons and mild open winters."

# ZEROLENE

The STANDARD OIL FOR MOTOR CARS

The condition of your car after a term of service—its value in dollars and cents, is determined largely by the kind of lubricating oil you use.

Zerolene lengthens the life of your car—keeps down depreciation by its efficient lubrication.

Dealers everywhere



STANDARD OIL COMPANY (CALIFORNIA)



For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

MASHELL PAINT CO. TACOMA, WASH.

## LIME FRESH AIRSLACKED HYDRATED

In Any Quantity. Write for Prices

Tacoma Trading Co.

DEALERS IN BUILDING MATERIALS

1715 Dock Street

TACOMA, WASH.

## 6 Glorious Roses

MAILED POSTPAID FOR—25c ALL WILL BLOOM THIS SUMMER

Hardy, Everblooming, Guaranteed True to Name

LADY HILLINGDON—Yellow, extra WHITE COCHET—Best white bedder CRIMSON CROWN—Glowing crimson LADY PIRRIE—Coppery salmon, fine MAHAN COCHET—Best pink bedder HABEL DREW—Cream and yellow I will send the 6 Roses in large 2-year size postpaid for only \$1.25.

DAHLIAS SURE BLOOMING COLLECTION WILHELM MILLER—Deep purple ORAN—Beautiful mauve A. D. LIVONI—Deep purple rose, profuse MATCHLESS—Rich crimson SYLVIA—White and pink CHAS. CLAYTON—Superb crimson cactus

One tuber, any variety, 15 cents. Any 3 for 40 cents. The 6 for 75 cents postpaid.

### DAHLIA SEED

New Century, Cactus, Black Striped, Double, Single, all colors. For 10c will send 50 seeds—enough for a fine Dahlia Garden. Catalog FREE.

MISS JESSIE M. GOOD

FLORIST AND DAHLIA SPECIALIST, Box 224 SPRINGFIELD, OHIO

## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

ACME REALTY COMPANY

401 Equitable Bldg, Tacoma, Wn.

## STERLING RAMS PUMP WATER



The STERLING is an IMPROVED HYDRAULIC RAM made in all sizes for irrigation projects, city water works, farm and home water supplies, etc. Every Ram guaranteed. Capacity 2 to 5500 gals. per minute. Prices from \$25 up.

Write for Catalogue. HILL HYDRAULIC MACHINERY CO.

615 Pacific Block, SEATTLE, WASH.

## Small Fruit Plants

at

## Wholesale Prices

|              |              |
|--------------|--------------|
| Blackberries | Gooseberries |
| Raspberries  | Currants     |
| Loganberries | Dewberries   |
| Strawberries | Rhubarb      |
| Asparagus    |              |

Write for prices.

## F. H. Burglehaus

SUMNER, WASH.

WANTED—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.

## Rhododendrons

Native Shrubs, Plants and Flowers, collected from the forest. Send for Circular.

JOEL SHOMAKER  
Nellita, Washington

## Nursery Stock

FRUIT TREES SMALL FRUITS ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY

F. J. Rupert, Mgr.

SALEM OREGON

Please mention this paper



# HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FOWLERSON

## THE NIGHTINGALE AND GLOW-WORM.

A nightingale, that all day long  
Had cheered the village with his  
song,  
Nor yet at eve his note suspended,  
Nor yet when eventide was ended,  
Began to feel—as well he might—  
The keen demands of appetite;  
When, looking eagerly around,  
He spied, far off, upon the ground,  
A something shining in the dark,  
And knew the glow-worm by his  
spark;  
So, stooping down from hawthorn top,  
He thought to put him in his crop.

The worm, aware of his intent,  
Harangued him thus, quite eloquent:  
"Did you admire my lamp," quoth he,  
"As much as I your minstrelsy,  
You would abhor to do me wrong,  
As much as I to spoil your song;  
For 'twas the self-same Power divine  
Taught you to sing, and me to shine;  
That you with music, I with light,  
Might beautify and cheer the night."

The songster heard this short ora-  
tion,  
And warbled out his approbation,  
Released him, as my story tells,  
And found a supper somewhere else.

WILLIAM COWPER.

## CHEERFULNESS.

Many who search for the fountain  
of youth pay no attention to the  
small springs of health-giving prac-  
tices they might use every day.  
There is within our control a very  
simple practice which will either  
shorten or prolong our lives. The  
control of temper is the tiny spring,  
says the Prairie Farmer. "Laugh and  
the world laughs with you; weep and  
you weep alone." A cheerful spirit  
goes a long ways in overcoming dif-  
ficulties and in making friends. A  
grouch has less chance of being a  
leader than has an amiable person.  
He is handicapped in life's race and  
the victor will be the one who has  
control of himself.

A cheerful atmosphere is the one  
we all wish to live in and yet many  
of us expect some other member of  
the family to furnish the sunshine  
while we go around looking like a  
rain cloud. Cultivating kindly thoughts  
and mental serenity may be begun at  
any time in life, but the habit comes  
easiest to us in our youth and the  
longer we use any good quality the  
greater the life and the longer we  
live.

We all love best those of our  
friends who are cheerful and happy  
and who fill us with happy thoughts  
whenever we are with them. We  
like least of all those who seldom  
have a kind word to say about any-  
body or anything.—Selected

Success never comes to the man  
who sits on a drygoods box and  
whistles for it. A. G. Leonard says,  
"success comes to those who hustle  
wisely while they wait."

The world advances, and in time  
outgrows

The laws that in our father's day  
were best.

Her mirror is turned forward to re-  
flect

The promise of the future, not the  
past—Lowell.

Murmur not dispensations of God,  
but correct thine own heart; neither  
say within thyself, if I had wealth,  
or power, or leisure, I should be  
happy; for know they all bring to  
their several possessors their pecu-  
liar inconveniences.

## SWEET PEA GROWING.

Sow sweet pea seed in good gar-  
den soil says A. L. Pack of the Ore-  
gon Agricultural College Station.

"The soil should be carefully pre-  
pared, spading to a depth of at least  
a foot, and turning in, in the lower  
six inches of this soil, a liberal  
amount of well-decomposed barnyard  
manure. The top six inches of the  
soil should be stirred over again with  
a spade before planting.

"As soon as the soil is in good  
working condition, the sweet peas  
can be set out, or sown. For sowing  
the seed, dig a small trench or fur-  
row, about 4 or 5 inches deep,  
smooth the surface of the soil in the  
bottom of this trench and sow the  
seed evenly, using about one ounce  
of seed to 15 or 18 feet of the row.  
Then cover with two inches of soil.  
When the seedlings are four or  
inches high, one can thin out so that  
the plants will remain about six  
inches apart in the row."

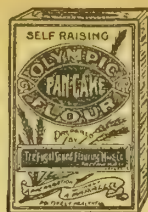
At this time one should have cata-  
logues from the various seedsmen at  
hand, and he will be able to use  
these publications to aid him in se-  
lecting his varieties of sweet peas.  
Many people prefer to plant sweet  
peas in mixtures. In this case some  
of the most satisfactory varieties can  
be obtained, and at that somewhat  
more cheaply than could the named  
varieties in separate packets.

## HOME RELATION AND DANCE HALLS.

The preponderance of evidence  
upon the morals of average public  
dance halls according to Richard  
Henry Edwards of the Wisconsin  
University, department of general  
information and welfare, is decidedly  
in the negative. The difficulties  
which arise in one form or another  
are usually due to the breakdown of  
social proprieties, the ease of mak-  
ing acquaintances, the sensual char-  
acter of the dancing which is allowed  
to prevail, the sale of liquor, the  
tendency to coarse conversation and  
profanity, darkness in certain por-  
tions of the building accessible to the  
dancers, or shadow dances, the lack  
of supervision, and the character of  
some at least of the persons in at-  
tendance.

"It is obvious that all of these ten-  
dencies and influences have been in-  
tensified in public dance halls by the  
"modern dances," in which bodily  
contact has been conventionalized to  
an unprecedented degree, and faint-  
ing due to prolonged sex excitement  
is not infrequent.

"The development of artistic danc-  
ing—folk dances and the like—in the  
settlements and recreation centers  
is the most direct effort of recent



## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every mem-  
ber of the family its friend, and it digests easily for all.  
Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

## Find out how much it will cost to build

Here's the kind of saving you can make if you buy from H-L-F. Recent  
savings are: John Loritz, Hebron, N. Dak., \$280; Matt. Schauf, R. 2, Sparta, Wis.,  
\$200; H. F. Sick, Chappell, Neb., \$204 on an H-L-F silo. Find out the big saving  
we can make YOU—and do it NOW.

### Send carpenter's bill of materials to H-L-F

for the H-L-F price. No extras. Grade, quality,  
complete satisfaction guaranteed; no obligation.

**Write quick for H-L-F House Pricer**  
If you haven't material bill, send for H-L-F  
House Pricer. Answer few questions, get guar-  
anteed price.

**Save \$100 or more on an H-L-F Silo**  
Double walls. Solid as a rock. Cheapest on  
the market. 100-ton size, \$174 delivered. Send  
coupon for folder.

**Good Plans**—Send 10c for H-L-F Prize Plan Book, 4c  
for Barn Builder's Guide. Get your free copy of H-L-F  
Millwork Catalog, H-L-F Silo Folder. Write today.

**HEWITT-LEA-FUNK CO.**

793 Cray Bldg., Seattle, Wash.

Capital \$1,000,000 Not in any trust or combine

**Hewitt-Lea-Funk Co.**  
793 Cray Bldg., Seattle, Wash.

Gentlemen: (Please write plainly)

Please send me the following—

( ) Delivered, freight-paid price of enclosed

list of materials (no charge for quotation)

( ) H-L-F House Pricer (free)

( ) H-L-F Silo Folder ( ) Prize Plan Book (send 10c)

( ) Barn Builder's Guide (send 4c)

( ) Millwork Catalog (free) ( ) Plan Sheet (free)

( ) Information on H-L-F Patented Stud and Wall Board

Name \_\_\_\_\_

Business \_\_\_\_\_ Street or R. F. D. No. \_\_\_\_\_

Post Office \_\_\_\_\_ State \_\_\_\_\_

When are you going to build? \_\_\_\_\_

## \$3000 FOR YOU

That's the money you should get this year. I mean it. I want County Sales Managers  
quick, men or women who believe in the square deal, who will go into partnership with  
me. No experience needed. My folding Bath Tub has taken the country by storm.  
Solves the bathing problem. No plumbing, no water works required. Full length bath  
in any room. Folds in small roll, handy as an umbrella. I tell you it's great! GREAT!  
Rivals \$100 bath room. Now listen! I want YOU to handle your county. I'll furnish  
demonstrating tub on liberal plan. I'm positive—absolutely certain—you can get bigger  
money in a week with me than you ever made in a month before. I KNOW IT!

### Two Sales a Day— \$300.00 a Month

That's what you should get—every month. Needed in every home, badly wanted,  
eagerly bought. Modern bathing facilities for all the People. Take the orders right  
and left. Quick sales, immense  
profits. Look at these men—  
Smith, Ohio, got 18 orders first  
week; Meyers, Wis., \$250 profit first  
month; Newton, California, \$80 in  
three days. You should do as well. 2  
SALES A DAY MEANS \$300 A MONTH.  
The work is very easy, pleasant,  
permanent, fascinating. It means a  
business of your own.

Little capital needed. I grant  
credit—Help you out—Back you up  
—Don't doubt—Don't hesitate—Don't  
hold back—You cannot lose. My other men are  
building houses, bank accounts, so can you. Act then  
quick, SEND NO MONEY. Just name on penny post card  
for free tub offer. Hustle!

**Demonstrating  
Tub  
Furnished**

**H. S. Robinson, Pres., 2648 Factories Bldg., TOLEDO, OHIO**  
Canadian Branch—Walkerville, Ont.

## M. C. TEBBETTS Incorporated

Buy your supplies right and  
you won't need to pay the  
other fellow's debts. Send for  
price list.

### GROCERIES — FURNITURE

3% freight allowance if you  
mention this paper.

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store you thought was best."

**M. C. TEBBETTS, INC.**

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Tacoma, Wash.

## NORTHWEST GROCERY CO.

HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and  
address will bring an up-to-date  
cash price list. Buying supplies on  
time is expensive. Conditions are  
improving. Why not make money  
by buying right?

**Northwest Grocery Co.**

13th and Commerce Sts.,

Tacoma, Wash.

Oldest and Largest Mail Order  
House in the State.

## Mail Your SEED Orders for 1915 Now



My stock of SEEDS consists  
only of those MOST-USED and  
BEST ADAPTED to the soils and  
climate of the PUGET SOUND  
COUNTRY.

For pure and reliable seeds  
send your orders to

**CHAS. HOOD, The Seed and Hardware Man**  
Puyallup, Wash.



years to restore an appreciation of the dance as a form of art, and to offer a corrective to excesses in the modern dances."

#### HOW TO DRAW A CHICKEN.

Following are the directions given by the poultry dressing specialists of the United States Department of Agriculture for drawing a chicken at home:

1. Hold the chicken by the legs and run it quickly over the flame of a loosely twisted lighted newspaper, which, for safety, may be laid in a coal bucket or ash pan. This will remove the fine hairs. Remove any pin feathers with the aid of a sharp, small knife blade. The charred hair may be washed off later.

2. Cut the legs off well below the knee joint. If the legs are cut above the knee joint, the flesh on the drumstick will be pulled back from the end.

3. Cut the head off, leaving as much of the neck as possible, then push the skin of the neck back and cut the neck off quite close to the body. The envelope of the remaining skin gives the dressed bird a neater appearance. The neck bones, with the adhering meat, make a valuable addition to the giblets. The gullet and windpipe are, of course, on the neck, and must be pulled away.

4. To remove the entrails, make an incision about two and one-half inch in length across the abdomen, and as close to the vent as possible. In making this incision, be careful not to penetrate the intestine. Slip the fingers in first, and gradually insert the whole hand through the slit into the body cavity. Work the viscera loose from its attachments by sliding the fingers over the inner surface of the body walls. In this way, after a little practice, the viscera can be removed quickly and easily. The lungs will almost invariably tear, leaving shreds sticking to the back. These, and the kidneys of the chicken, which are two long, dark red bodies lying each side of the backbone, and firmly fastened, should be removed in pieces. The rest of the viscera, including the crop, which lies far front and just under the skin of the breast, when loosened, will come out in a mass through the incision. The intestine is still attached to the bird at the vent. To separate it cleanly, the tube should be picked up just as close to the vent as possible, and its contents pushed well back from the vent. Then cut closely around the vent, hold the intestine tightly between the fingers to insure cleanliness. Run a stream of water through the slit into the body cavity in such wise that it flows out through the vent and cleans the short pieces of intestine still remaining. Then cut both vent and intestines away, leaving a neat, round hole no larger than is necessary.

#### TIME TO SWAT THE FLY.

Uncle Sam is waging a relentless war on the deadly housefly and in a late bulletin prepared by the Department of Agriculture, valuable information is given on the best means of combating this deadly pest. The most effective way of exterminating the fly, according to the bulletin, is to eradicate his breeding places.

The breeding season of the fly begins early in March and continues through out the spring and summer months. All dirt should be removed from the premises, stables cleaned and decaying vegetables destroyed.

The fly has rightly been called the undertaker's traveling salesman, and in addition to his regular line of "typhoid bugs," he carries a side line of tuberculosis, Asiatic Cholera and other disease germs. Now is the time to "swat the fly."

#### VARIETY IN PLAIN LIVING

The bulletin on "The Planning of Meals," by Isabel Bevier, issued by the University of Illinois, gives twelve menus, using, each time, four staple foods—beef, potatoes, cabbage and apples. These staples are cooked differently in each menu:

1. Porterhouse steak, mashed potatoes, cabbage salad with nuts, baking powder biscuit, apple pie, coffee.

2. Tongue, cabbage and potato salad, popovers, apple turnovers with cream, tea.

3. Roast ribs of beef, baked potatoes, cabbage salad (sour cream dressing), plain bread, baked apples with cream, coffee.

4. Creamed dried beef, stuffed potatoes, creamed cabbage with peppers graham muffins, brown Betty with cream, coffee.

5. Shepherd's pie, creamed cabbage, white muffins, apple souffle with whipped cream, cocoa.

6. Corned beef, boiled potatoes, boiled cabbage, butter rolls, apple pudding, coffee.

7. Short-ribs, French fried potatoes, steamed cabbage, apple dumplings and cream, graham gems, coffee.

8. Rolled stuffed steak, browned potatoes, hot slaw, baked apples, cream, jelly, nuts, coffee.

9. Hamburg steak, riced potatoes,

## Red Crown the Gasoline of Quality

Made up to a standard—not down to a price. We make the best gasoline that our experience and resources enable us to produce. The quality of the gasoline determines its price—not the price its quality. Dealers everywhere.

STANDARD  
OIL COMPANY  
(California)



## Saves You Money Gets Better Results From Bees

The experience of bee-keepers in many parts of the United States is proving that no hive is more cleanly, more durable, or resists dampness, heat and cold more than

## WASHINGTON CEDAR DOVE-TAILED HIVES

This hive lasts longer, either painted or unpainted, than any other wood hive, and in any climate.

Every hive is made of air-seasoned and kiln-dried Washington Cedar, free of knots, and with perfectly cut tight-fitting joints. The production of large quantities in our well equipped plant enables us to sell Washington Cedar dove-tailed Hives at lower prices than other hives of similar quality.

A complete price list of these Cedar Hives, and of Bee Supplies will be sent you on request.

## Brew Manufacturing Company

Puyallup, Wash.

### Canadian Wheat to Feed the World

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

**You can get a Homestead of 160 acres FREE** and Other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war.

The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

**J. N. Grieve, Cor. 1st and Post Streets, Spokane Wash..**  
Canadian Government Agent.

**160 ACRE  
FARMS IN  
WESTERN  
CANADA  
FREE**

escaloped cabbage, graham bread, apple tapioca, coffee.

10. Corned beef hash, potatoes with butter and parsley, cabbage au gratin, entire wheat muffins, Dutch apple cake, lemon sauce, tea.

11. Beef loaf, creamed potatoes, cold slaw, nut bread, Dutch apple cake with cream, coffee.

12. Pan broiled flank steak, escaloped potatoes, fried cabbage, French rolls, apple shortcake and cream, cocoa.

## Franquette

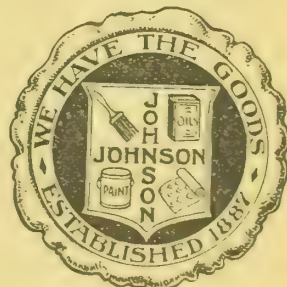
Grafted Trees  
on  
Black Walnut

Two thousand Franquette and Mayette trees in different sizes. Stock and strain of highest quality.

Table Grapes, strong vines, olives, almonds and other stock. Write for list and prices.

TABLE GROVE NURSERIES  
A. J. GALLOWAY, Prop.  
Healdsburg, Calif.

## A. S. Johnson & Co.



1142 C Street

Tacoma, Wash.

**FOR SALE**—Acetylene Gas Generator, brand new, only half price, 15-burner capacity. L. E. NEVIUS, Sylvan, Wash.

## RED AND ALSIKE CLOVER SEED

Direct from the section where grown, at lowest price.

Address **RHOTEN FARM**  
**SALEM, OREGON**



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### PURE MILK.

By M. M. Carrick, M. D.

So many dramatic disclosures have been made in regard to the relation between dirty milk and excessive death rate among infants that farmers are beginning to realize as never before, the necessity of cooperation with the municipal authorities in their fight for pure milk.

Milk is certainly the most important article of food in the human dietary, and it is also the most contaminable. It is, therefore, up to the farmer to see that the milk from his dairy gets to city babies in as reasonable a state of cleanliness as possible. Not that this is an inclusively baby problem, for all sorts of diseases are carried through milk. Tuberculosis is an example of this class, and a number of epidemics of diphtheria and scarlet fever have been traced to the milk supply, but when we pause to consider that one-fifth of all the babies born in the United States die in their infancy from preventable diseases, and that sixty per cent of these are due to gastro-intestinal diseases, due to improper feeding or impure milk, we naturally begin to look into the cause.

I realize, of course, that not every farmer can have his milking done scientifically, but it is possible for him to produce safe milk for his own use and that of the public by very simple and inexpensive means.

He may not have an elaborate dairy outfit, but his cattle can be kept clean and in perfect health with the assistance of a veterinary. It will be to his financial interest in the long run. Tar paper, whitewash and homemade cement will insure a sanitary stable at small cost.

Then, there should be a covered milking pail in place of the old-fashioned wide-mouthed pail. This will keep nine-tenths of the dirt out during milking time. All milk utensils may be kept clean by the use of a brush and a solution of soda followed by a final rinsing in scalding water.

### COW TESTING ASSOCIATION.

In Whitman County, Washington.

The dairymen of Whitman county recently organized the Whitman County Cow Testing association with the following officers, according to the extension News Service. President, H. H. Curtis, Pullman; vice president, A. G. Woodward, Fairbanks; secretary, J. D. Carson, Pullman; treasurer, A. B. Nystrom, Pullman. William H. Beardsley has been employed as tester. Some of his duties will be to visit the farms once a month, do the testing, inspect the feeding, etc. His duties began March 1st. This organization is the result of the preliminary work done by Mr. A. J. Lashbrook as field dairy agent. This is the only organization of the kind in eastern Washington.

### FINANCING DAIRYING ENTERPRISES.

A special committee of the Spokane Clearing House association has been named by F. M. March, president, to investigate plans that Inland Empire towns may follow in financing the movement of farmers in their districts to increase their dairy herds, according to the Spokesman Review. The committee consists of W. D. Vincent, vice president of the Old National Bank; J. J. Rouse, cashier of the Fidelity National Bank, and W. L. Cark, auditor and assistant secretary of the Spokane & Eastern Trust Company.

The committee will study the matter and submit to the Spokane Chamber of Commerce a plan which can be adopted by the various communities wanting loans. Several towns are working on the matter, and the interest of the local bankers has been aroused by the chamber of commerce in the case of Plummer, Idaho, which has assurances that a creamery will be started there as soon as sufficient cows are available. Plummer is working to secure the additional dairy stock.

#### Holsteins for Wenatchee.

The banks of Wenatchee, Wash., are purchasing milch cows for the small land owner in that section. A carload of blooded Holsteins was shipped from Sherwood to Independence recently, which later will be shipped to Wenatchee and distributed from that point. The animals were purchased from E. Lauber, of Tualatin, by William Block, a Portland stockbuyer. The average price was \$85 a head. Mr. Lauber disposed of about 12 head and about the same number will be purchased at Independence.

### PUREBRED DAIRY CATTLE AT PROSSER.

#### Dairying on Higher Standard.

According to the Spokesman Review, dairying is being raised to higher standards at Prosser.

A purebred Holstein bull has been added to the herd of George P. Gagnon. The animal, two and a half years old, was sired by Korndyke Hengerveld de Kol Eleventh, who was the junior champion in his class at the A. Y. P. exposition and grand champion at the Washington state fair in 1912. A number of irrigated land farmers are securing registered dairy stock.

The formation of a cow testing association by local dairymen is being undertaken with good prospects of success.

#### COST OF FAT AND FEED.

Mr. B. C. Crabtree, Lynden, Wash., owner of a good herd of Jerseys estimated that the feed cost per cow in 1914 was \$50.20 and the cost of butter fat was 17 cents per pound.

The herd varied widely, one individual cow producing fat at a cost of

## Absolute Dispersion Sale

TO BE HELD AT THE  
STATE FAIR GROUNDS

NORTH YAKIMA, WASH.

THURSDAY, APRIL 15th

COMMENCING AT 9:30 A. M.

100—HOLSTEINS—100

COWS, HEIFERS AND CALVES

Everything Over Six Months, Tuberculin Tested by  
State Veterinarian

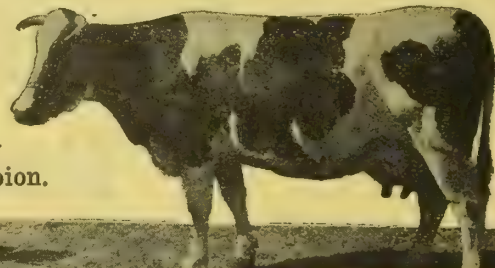
This is the most famous herd in the State of Washington, comprising not only large record cows, but is also the herd that made the sensation exhibit at the National Dairy Show, Chicago, Ill., in 1912. Among the cattle to be dispersed are daughters and granddaughters of the famous cow, Gerhen Queen, with a record of 36.39 lbs. butter in seven days, 136 lbs. butter in thirty days, and 3100 lbs. milk in thirty days. Daughter and grand-daughter of Bonnie Lass Pauline, with 33.9 lbs. butter in seven days and 134 lbs. in thirty days. Daughters and sisters of Hazlewood Aaggle DeKol, with a record of 34.9 lbs. of butter in seven days with second calf; this heifer has the distinction of being the world record producer of her age for the year 1911. In this herd is also the grand champion cow at the National Dairy Show, Chicago, she having a record of 25 lbs. as a junior three-year-old and out of a 33 lbs. dam. The first prize four-year-old with a 26 lbs. four-year-old record; also sons and daughters of the first prize three-year-old who has a 26 lbs. two-year-old record. The first prize yearling heifer, second prize heifer calf and second and third prize junior calf, also the first prize bull calf. Sons and daughters of the junior champion bull, and other attractions too numerous to mention here, making in all the greatest offering of producing and show animals ever offered at public sale. If you want to get a start in the right kind of dairy cows, now is your chance.

Six and nine months time at 8 per cent. interest will be given on approved paper.

CATALOGUE UPON APPLICATION AFTER MARCH 20th

RIVERVIEW FARM, Ferry, Wash.

Address GEO. A. GUE, Sales Manager, North Yakima, Wash.  
Auctioneers—LINBARGER & GUE, North Yakima, Wash.  
J. W. HUGHES, Forest Grove, Ore.



Here's the new  
World's Champion.

## MORE EVIDENCE of the Value of LARROWE'S DRIED BEET PULP

Mr. Dairyman,  
Anywhere.

Dear Sir:—

The above photo is of Tilly Alcartra, the new world's champion milk producer, bred by A. W. Morris & Sons of Woodland, Cal. This cow's record for the past year was 30,452 lbs. of milk.

One of the principal items in her feed was Larrowe's Dried Beet Pulp.

Could we offer better evidence of the wonderful value of this splendid, succulent, vegetable feed?

Considering the present high prices of bran and other mill feeds now is a good time for you to start feeding Larrowe's Dried Beet Pulp. Order a single 100-lb. sack from your dealer today and test it on one cow whose milk record you know.

Sincerely yours,

THE LARROWE MILLING CO.

P. S.  
Our booklet, "Profitable Feeding," giving valuable information about feeds, will be sent free if you address a postal to us at

Ninth Floor Central Bldg, Los Angeles Cal.



11 cent per pound and earning a profit of \$90, while another cow's fat cost 25½ cents per pound, making a profit of but \$13.70 for the year.

Mr. Crabtree raised most of the feed consumed. Oat ensilage cost \$3.30 per ton in the silo. Feed was made up of hay, silage, kale, beet pulp, oil meal and ground oats, the latter three very sparingly. Pasture cost 8-13 cents per day per cow; kale, 3½ cents; silage 5 cents; clover hay 7 cents; beet pulp, oil meal and ground oats, 5 cents per day each, and were fed in season or as found most convenient to make a total average cost of ration per cow about 14 cents.

Judge E. L. Brady, Satsop, Wash., who has a valuable herd of registered Guernseys stated recently that the average income from dairying based on local market prices, for some of his young cows was \$111 last year. The cost of feed in his locality did not exceed \$56 per cow.

#### GUERNSEY'S HIGHEST MILK RECORD.

For Two Years of Age.

The standing which a cow has in the Guernsey breed is determined largely by the amount of butterfat she can produce in the course of a year. In this particular breed this is as it should be. Yet, it is naturally a source of gratification to people who own Guernseys and are selling market milk to know that Guernsey milk records are being broken as well as the butter fat records. The two-year-old Guernsey cow, Marshall's Lady Dudley 43364, owned at Bethany College Farm, Bethany, West Virginia, began her test when only about 23 months of age, and during the following year produced 14,813.6 pounds of milk and 606.5 pounds of butter fat. This is the largest milk record ever made by a two-year-old Guernsey, and the butter fat milk record is one of which the college farm is not ashamed. Her breeding is that of Sheet Anchor on the sire's side, and runs back through Golden Noble 2d to the May Roses on the dam's side.

A. G. C. C.

#### WASHINGTON LIVE STOCK AT EXPOSITION.

Washington stockmen from Nov. 1st to the 15th will have twenty-four carloads of stock from this state to the big Panama-Pacific International Exposition. Be with us and help boost the state, as a place for growing the best live stock in the world. The Washington State Exposition Commission have copyrighted the word "hospitality" and will entertain you at various times during your visit. Two thousand or more stockmen from this state at that time will take advantage of this opportunity to get acquainted; to enjoy the state's entertainment and reduce the expense of the trip. Be with us.

Washington State Exposition Commission,

By ROBT. BURT,  
Live Stock Commissioner.

#### PURE-BRED SIRES.

Over 600 dairy farmers in Oregon are using registered sires of either of the following breeds: Jersey, Guernsey, Holstein or Ayrshire. There are perhaps less than that number in Washington, but there

should be over 1000. In fact, no dairyman can afford to be identified with this industry unless he is breeding up and that means the use of a pure bred sire.

#### JERSEY BREEDERS

##### SALE CATALOGS.

The catalogs for the Inland Empire Jersey Breeders Association sale to be held May 10 at Spokane are limited and will be mailed only to those interested. Those desiring copies should apply early to W. T. Newberry, Route 1, Mica, Wash.

#### HOLSTEINS OF NOTED BREEDING.

Offered at First Western Washington Semi-Annual Sale.

All breeders of Black and White cattle, will be interested in the 1st Semi-Annual Holstein Sale, to be

held on Snohomish Fair Grounds, Snohomish, Wash., March 17th, 1915.

This is chiefly a Breeders sale, as nearly all the stock consigned has been bred by the Consignors. It is becoming more evident every day, that breeders of the northwest, do not need to go east for high class stock, as we can produce as good, if not better, right here at home.

There are many fine animals to be sold in this sale; among them a son of Margie Newman (the World's champion milk cow, that gave 136.50 lbs. milk in one day). Surely he will look good to some one. He is consigned from the herd of Chas. Eldridge.

Among the consignments from the Hollywood Herd are two splendidly bred young bulls, whose pedigrees trace back to the noted sire, Hengerveld De Kol, which has 116 A. R. O. daughters, 9 having records over 30 lbs. butter in 7 days.

The 3 bulls consigned by the

Greenbank Co., are wonderfully well bred, being sired by none other than the Grand Champion bull, Mutual Fobes Longfield De Kol. One of them is out of Josephine Duches, that at 6 years of age gave 29.12 lbs. butter and 571.20 lbs. milk in 7 days; another out of Fay Nudine De Kol 2nd, who has 27.23 lbs. butter and 546.70 lbs. milk in 7 days to her credit. The other dam is Edna Midnight who made 22.30 lbs. butter and 501.70 lbs. milk in 7 days. These bulls surely are just what some men need to put at the head of their herds.

Among the offerings from the herd of Herman Steffen, are 2 fine young bulls, one tracing to Hengerveld De Kol, and the other to the former world's champion cow, Pietertje Maid Ormsby, with 35.56 lbs. butter in 7 days.

J. H. Hulbert, Jr., offers 3 splendidly bred young heifers and 3 young bulls, one of which traces to Pontiac

# THE DE LAVAL LINE

## Automatic Oiling De Laval Cream Separators and Milk Clarifiers



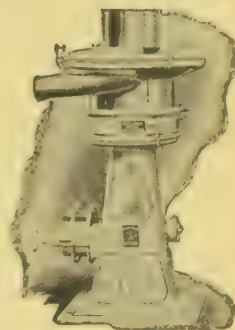
De Laval Separator

### DE LAVAL CREAM SEPARATORS

Farm and Dairy sizes ranging from 135 lbs. to 1350 lbs. capacity. Hand power, Belt or Turbine driven. Creamery and Factory sizes from 2000 lbs. to 6000 lbs. capacity. Hand power, Belt or Turbine driven.

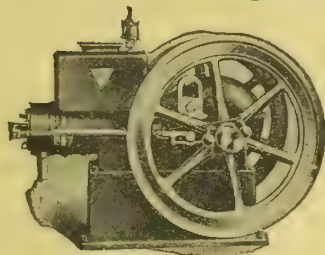
### DE LAVAL MILK CLARIFIERS

Farm, Dairy and small Milk plant sizes from 100 lbs. to 2000 lbs. capacity. Hand power, Belt or Turbine driven. Large Factory and Milk Plant sizes from 2000 lbs. to 12,000 lbs. capacity. Hand power, Belt or Turbine driven.



De Laval Milk Clarifier

## Alpha Gasoline and Distillate Engines



Self-Contained, Hopper-Cooled-Type Alpha Engine

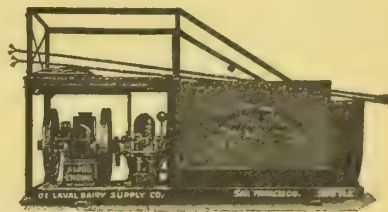
A Size and Type for your every requirement. Wherever continuous and heavy power is required.

ALPHA ENGINES ARE THE IDEAL POWER.

No Batteries

No Coils.

No Troubles.



Alpha Combination Power Sprayer Outfit

## James' Sanitary Barn Equipment

JAMES ALL STEEL STALL. Complete with or without manger or manger divisions.

JAMES STEEL WOOD-LINED STANCHION, double chain hung with alignment device and door-knob type, cow-proof lock.

JAMES INDIVIDUAL SELF-CLEANING MANGERS and manger divisions.

JAMES TRIPLE CURVE STEEL PARTITION for both wood and cement floor.

JAMES ALL STEEL CALF PENS, COW PENS, BULL PENS, AND HORSE STALLS.

JAMES INDIVIDUAL WATERING BUCKETS.

JAMES ALL-STEEL ADJUSTABLE HOIST LITTER CARRIERS, milk can carriers, feed carriers and 3-wheel feed trucks.



James "Big Boy" Litter Carrier

## Ideal Green Feed Silo



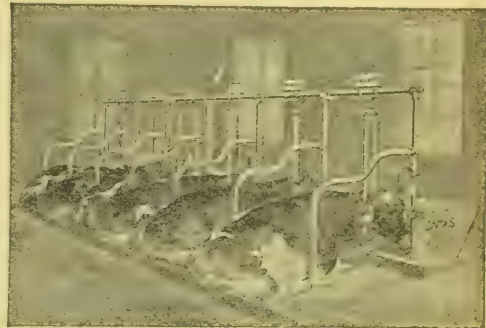
OVER TWENTY YEARS' PRACTICAL EXPERIENCE IN SILO BUILDING enables us to furnish you a silo that will return to you as GOOD ENSILAGE every pound of good feed you put into it.

PROPER DESIGN — CAREFUL CONSTRUCTION—BEST MATERIAL—PERFECT RESULTS.

"THE DAIRYMAN'S GOLD MINE."

Sanitary Milk and Cream Coolers, Babcock Testers, Cattle Ear Labels, Viking Rotary Pumps, Centrifugal Pumps, Irrigation and Pumping Plant Equipment, Milk Pails, Milk Fever Outfits, Refrigeration Plants, Steam Boilers and Engines, Alpha Combination Power Spray Outfits.

Everything for the Dairy.



James' Steel Stall with Patent Manger and Adjustable Stanchion

DE LAVAL DAIRY SUPPLY CO.,  
Seattle, Wash.

Please send full information regarding

Name .....  
Address .....



Korndyke, as great a sire as the breed has ever produced. Mr. Hulbert had a very fine herd of cattle, and at its head stands one of the finest bulls in the west. I am sure you will be pleased with his offerings.

Hugh Nesbit consigns 3 young bulls, bred in splendid lines. It will be remembered that Mr. Nesbit topped the sale last December, at North Portland, when the young bull Segis Riverside Pontiac sold for \$1025.

D. J. DeHoogh consigns 6 fine young cows and heifers of excellent breeding, whose pedigrees show up strongly in Sarcastic Lad and Paul Beets De Kol blood.

Albert E. Smith, of Seattle, consigns 7 females among the well known names shown in their pedigrees are those of De Kol Burke; Duches Ormsby Butter King; Pearl of the Dairy's Joe De Kol; and Count Colantha Alban; and some of them have A. R. O. records.

John C. Burnham offers at this time one cow and a grandson of Karel Bos, which was imported from Holland, his dam and granddam, had the largest records (authenticated) ever made in Holland. He was purchased by Henry Stevens and Sons and brought to stand at the head of their herd, from there he was purchased by Wm. Bishop, and brought west. He has a good showing of A. R. O. daughters.

Last but not least is the consignment of Wm. Bishop, pioneer Holstein breeder of Washington. This lot consists of young cows, heifers and bulls. Look their pedigrees over carefully and then come prepared to get as many of them as you can.

It is to be hoped that the breeders and those of the Sound district especially, will appreciate this opportunity to such an extent as to attend and patronize largely this 1st Semi-Annual Sale.

G. A. GUE.

#### GUERNSEY COW LEADS.

The Guernsey cow, Murne Cowan 19597, makes a World's Record. The former World's Champion, May Rilma 22761, also a Guernsey, is surpassed by a liberal margin in both milk and butter fat. Twice in the past year Guernseys have shown their ability and superiority.

Murne Cowan was bred by A. F. Peairs of Elizabeth, Pa., and was purchased three years ago by O. C. Barber, Akron, Ohio, together with her three year old daughter, four months' old son and six other heifers. The nine head cost \$1100. An estimate of their present value would be a very difficult problem.

Under A. R. test as a six year old beginning her year's work three months after freshening, she gave 16,729.30 pounds milk and 841.41 lbs. butter fat. Her second record, completed Feb. 19, 1915, of 24,008 lbs. milk and 1089.18 lbs. butter fat, places her at the head of all competitors, regardless of breed.

Murne Cowan's average milk yield shows that every three weeks for a year, this cow has given her own weight of the most perfect food known, a superior quality of 4.5% milk. The milk from the herd sells for ten cents per quart. Murne Cowan has thus produced three dollars worth of milk daily throughout the year, with no Sundays or holidays for rest. She is a worker says the secretary of the Guernsey Cattle Club.

#### GROWING DEMAND FOR AYRE-SHIRE.

Mr. Walter J. Domes proprietor of the Crescent Hill Farm, McCoy, Oregon, in a letter to the Horticulturist and Dairyman states:

"Sales have been fine for me, so far this year. My January sales were

18 head as follows which I think pretty good for the first month of the year.

11 bulls gong to different parts of California, Petaluma, Ager, Berkeley, Pleasanton, Montague, etc.

4 heifers to Petaluma, California.

1 bull to Oakland, Oregon.

1 bull to Driggs, Idaho.

1 cow to McMinnville, Oregon.

It appears that good dairy stock is moving even if the war topic is a great attraction and object of conversation. Some people are "sawing wood."

#### BREWERS' OFFERING.

E. L. Brewers, Satsop, Wash., the noted breeder of Jersey cattle is offering some of his very choice producers at bargain prices for a short time.

Mr. Brewer's herd has become world famed and any one fortunate enough to get a foundation herd from him has a sound basis for prosperous dairying.

#### COAST DAIRYING CONDITIONS.

Leading dairymen are realizing more and more that the coast section of the Pacific northwest affords natural opportunities and conditions for successful dairying unequalled elsewhere. Among these are:

Humid climate of even and mild temperature throughout the year, the adaptability for production of leguminous forage plants rich in protein, the root crops, and corn to be grown for ensilage, the pure water available and the abundance of low priced lumber for necessary covering during rainy weather.

Mr. J. W. Clise and Mr. Wm. Bishop both world famed leaders, in each of their noted breeds, are agreed that if the dairymen of the Pacific Northwest do not raise cows which average higher in production than anywhere else in the world that the opportunities are not being fully improved, in other words, that it is an acknowledgment of inferiority of the average dairymen here by themselves as compared with their brethren of the industry elsewhere, for if some simple fundamental laws are supported with common sense care and foresight, the cows will naturally reach the top mark in performance themselves.

After years of experiments and education the average farmer in this section now realizes the value of good cows, to ascertain degree, but he does not look far enough ahead for a foundation on which to build up. There are too many who are indifferent about breeding. For instance, several farmers in good dairy districts between Tacoma and Seattle have very excellent high grade cows of the Jersey breed and they are now using fine bred Holstein sires which in their case is a serious mistake. They are tearing down or pulling apart that which has taken years to build up—a waste of time and money. Pure bred cattle of any dairy breed are too valuable to be used in breeding with other pure bred breeds, or with any cattle which is of so high grade as to be close to the pure bred line.

There is merit in using pure bred sires on native cattle in which no particular breed predominates, but when any one of the leading milk breeds has been chosen and a pure

## THE INLAND EMPIRE JERSEY BREEDERS ASSOCIATION

Will Sell at

### PUBLIC AUCTION

on the

Interstate Fair Grounds at Spokane, Wash.

MONDAY MAY 10th, 1915

80 to 100 Head of Registered Jersey Cattle

#### Consignors:

T. S. Griffith,  
Glan Tana Farm, Spokane, Wash.

J. P. Graves,  
Waikiki Farm, Spokane, Wash.

A. A. Newberry,  
Tredinnock Farm, Mica, Wash.

A. V. Bradrick,  
Imperial Farms, Cove, Wash.

Chas. H. Talmadge,  
Silver Birch Farm, Newport, Wash.

D. C. Dilworth,  
Buckeye, Wash.

A. G. Woodward,  
Fairbanks, Wash.

E. E. Flood,  
Broadview Farms, Rosalia, Wash.

Every animal sound and tuberculin tested. Register of Merit cows and their offspring, as well as a number of prominent show winners, will be included. For catalogue ready about April 1st, address either the Secretary or Sale Manager.

COL. D. L. PERRY, Auctioneer

W. T. NEWBERRY,  
Secretary,  
Mica, Wash.

CHAS. M. TALMADGE,  
Sale Manager,  
Newport, Wash.

## Western Washington Holstein Breeders Association

Will hold its

### First Semi-Annual Sale

on the

SNOHOMISH COUNTY FAIR GROUNDS,  
Snohomish, Wash.

75 Head MARCH 17, 1915 75 Head

#### Consignors:

WM. BISHOP,  
Chimacum.

J. C. BURMAN,  
Snohomish.

J. D. DE HOOGH,  
Lynden.

GREENBANK FARM,  
Greenbank.

HOLLYWOOD FARM,  
Hollywood.

J. H. HULBERT,  
Mt. Vernon.

HUGH NESBIT,  
Chimacum.

A. E. SMITH,  
Sumas.

HERMAN STEFFEN,  
Monroe.

A. B. WINTER,  
Everett.

#### SEVENTY-FIVE HEAD—TUBERCULIN TESTED

The "Best in the West" will be sold at this Sale, which will include a son of a 33-pound cow, and a number of promising young sons and daughters of large record A. R. O. cows, backed by the most fashionable blood lines of the day.

For a copy of the CATALOGUE that will be ready for mailing March 1st, address the Secretary.

Auctioneers:  
GUE and LINBARGER

A. B. WINTER,  
1515 Hewitt Ave.,  
Everett, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.



bred sire selected, it is a serious mistake. Subsequently to change by using pure bred sires of another breed.

At the present time a fine lot of young bulls in each of the leading dairy breeds are available from tested dams and sires raised in the Pacific Northwest. They are offered mostly at prices ranging from \$75 to \$150 each, a big sum of money apparently to many a hard working farmer. But in reality many of them are very low price, considering their real worth. It has been the experience of numerous dairymen in the Northwest that \$150 spent for a pure bred bull calf has paid over 400% profit on the

investmen within five years. There is a strong effort put forth at the present time for credit extension to dairymen. One of the essentials will be to know whether or not there is a sire of some known degree of merit at the head of the herd. As a rule a banker is safe in loaning money to a dairyman who has a registered and tested sire at the head of his herd, and who is bestowing ordinary care in his dairying operations. In fact there is lots of idle money waiting to save the kind of dairymen who figure far enough ahead to arrange for pure bred sires which have tested dams for the natural conditions for successful dairying are here in the full sense of the term.



#### TORONO'S OLINDA'S POGIS NO. 114864.

One of the greatest bulls in the northwest, is owned by Charles Richardson at Richmore Farms, near Steilacoom Lake. Was purchased from Hood's Farms, Lowell, Mass., for \$500 when a calf two months old and shipped here by express when five months old. This photo was taken when one year old. His dam milked with this calf 15,202 pounds twelve ounce milk, producing 850 lbs. of butter in a year.

This calf combines the blood of Sophie 19th of Hoods Farms, champion Jersey cow, champion long distance dairy cow of the world. He is a grandson of Hoods Farms Pogis 9th, sire of 76 register of merit cows, more than any other bull living or dead. Also a grandson of Hoods Farms Torono, sire of 67 register of merit daughters; 14 over 700 lbs., 6 over 800 lbs., 2 over 1,000 lbs. Torono's Olinda's Pogis is a dark red and has now at Richmore Farms 14 handsome calves,— 3 bulls and 11 heifers.

#### GRADE COW PRIZE.

It takes the pure bred to made the grade but there are more grade cows than pure breds so the Department of Live Stock of the Panama-Pacific International Exposition will offer a special tribute to the grade cow. A diploma will be awarded for the herd of four cows best suited for dairy purposes. These cows will be judged on all the points necessary to the make-up of an ideal dairy cow, and not as representatives of the breeds whose characteristics may be most strongly shown in them. Nor will this be a milking contest in any sense, but it will be for the purpose of showing to the assembled nations that type of cow upon which the farmers of the world depend for a most important part of their revenue, and it is expected to show that the more nearly the grade approaches the pure bred, the more valuable she is.

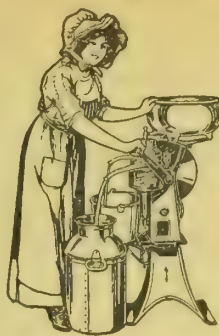
#### THE FEED RATION GUIDE.

The so-called balanced ration used by dairymen in computing the most economical feeds for the highest efficiency in dairy products is an essential guide. But do not make the

mistake of figuring that the dairy cow is just like a machine. She has taste and feelings and is governed to some extent by temperatures and surrounding conditions and she craves variety. Mr. E. L. Brewer keeps close tab on his heavy producers by weighing them frequently. If there is any sudden changes in the milk and fat content produced the scales on which she is weighed will help to determine whether or not the grain or other concentrates should be increased.

In general, said Ira P. Whitney, Superintendent Waikiki Farm, Spokane, at a recent farmers institute, under average conditions the cow giving 22 pounds of milk daily will require 29 lbs. of dry matter, containing 2.5 lbs. of digestible protein, 13 lbs. of digestible carbohydrates, and .5 lbs. of digestible ether extract, per 1000 lbs. of live weight. So complete are our tables that we can sit down and work out a ration from available feed stuffs that will meet these figures very closely.

It might seem that feeding the dairy cow would be an easy problem. Such is not the case. If the cow were a perfect machine, if the analy-



## The Supremacy of the De Laval Cream Separator 37 Years of Leadership

#### Supreme in Skimming Efficiency

Over 35 years of experience and thousands of tests and contests the world over have demonstrated the De Laval to be the only thoroughly clean skimming cream separator, under all the varying actual use conditions, favorable as well as unfavorable.

#### Supreme in Construction

This applies to every part of the machine—to the bowl, the driving mechanism, the frame and the tinware. The De Laval patent protected Split-Wing Tubular Shaft Feeding Device makes possible greater capacity, cleaner skimming and a heavier cream than can be secured with any other machine.

#### Supreme in Durability

The De Laval is substantially built. The driving mechanism is perfectly oiled and the bowl runs at slow speed, all of which are conducive to durability and the long life of the machine. While the life of other cream separators averages from three to five years, a De Laval will last from fifteen to twenty years.

#### Supreme in Improvements

This has been the greatest factor in De Laval success. Not a year goes by but what some improvement is made in De Laval machines. Some of the best engineers in America and Europe are constantly experimenting and testing new devices and methods, and those which stand the test are adopted.

#### Supreme in Service

With its worldwide organization and with agents and representatives in almost every locality where cows are milked, no stone is left unturned by the De Laval Company to insure that every De Laval user shall get the very best and the greatest possible service from his machine.

#### Supreme in Satisfaction

De Laval users are satisfied users, not only when the machine is new, but during the many years of its use.

#### Supreme in Sales

Because they are supreme in efficiency, construction, durability, improvements, service and satisfaction, more De Laval Cream Separators are sold every year than all other makes combined.

Order your De Laval now and let it begin saving cream for you right away. Remember, that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

### DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



#### THE GRAZING SEASON IS APPROACHING WHEN THE YOUNG CATTLE ARE WANTED.

No dairyman can afford to use any but a sire of high testing merits. By means of registration value is determined. We have a few young bulls whose dams and sisters show the high milk and butter fat records.

There is a larger demand than ever for our young registered Holsteins, evidently due to the fact that quite a number of our old customers have realized handsome profits from buying them. Young heifers and bulls raised here from calf are acclimated when ready for service. Having their breeding records and the animals in sight, a judge of dairy stock can size up pretty closely their value as producers in a dairy herd. We have some splendid youngsters to suit those who want either the registered, pure breds or high grades. And we have two registered bulls of serviceable age that could hardly fail to pay any owner of high grade Holsteins less than 200 per cent. on their cost, in the increased value of product from a future herd.

Write today for our descriptive and complete printed list of Holsteins and Guernseys.

### FRYAR & COMPANY

Please Mention  
This Paper

SUMNER, WASH.



sis and digestibility of feeds did not vary so greatly, such might be a possibility; but our feeding stuffs vary greatly and no two cows are exactly alike in their requirements, so that the man who would arbitrarily say just what feeds it will take to produce certain results in the animal body is doomed to disappointment. The individuality of the cow is something over which the scientist has no control. He must figure by averages, and as such his work is of immeasurable value, but it is up to the feeder with the balanced ration as a guide to secure the best results. If you will go into our dairy barns and talk with the men who are successful feeders and learn what they are feeding, you will be surprised how near they come to feeding the balanced ration as the scientist has worked it out for us. The successful feeder is the man who knows his individual cow and caters to her likes and dislikes. The real feeder is going deeper than can the scientist, for he knows the cows and, while he may not realize it, he is balancing the ration for each individual that he is feeding.

#### Preparing for Registered Herds.

The Bellingham Bay Improvement Company of Bellingham, are making preparations to raise registered Ayrshires and Holsteins, and are disposing of some high grade Jerseys and Durham cows, mostly 2-year-olds.

#### SILOS IN DEMAND.

That the coast farmers of Washington have been started right on the silo system of cropping and feeding is evidenced by the increased number of orders coming from those who have used silos the past few years.

The Weyerhaeuser Lumber Company of Everett, is getting letters from many of its patrons expressing satisfaction, and explaining how by means of the silo, a greater amount of forage crops is grown and preserved from a given acreage than can be done without the silos.

Among some of these are Roe Bros., Route 2, Everett, who put in a 10x30 silo in 1913. In 1914 they bought a 16x34 and will soon be ready for another.

Senator E. M. Stephens, Monroe, Wash., bought 2 18x30 ft. silos in 1912 and the next year added one 16x30 ft.. The Senator is deriving a high measure of satisfaction.

The Pembroke Investment Company, near Portage, Wash., first experimented with a 10x24 silo. The next year they bought another of same size and in 1914 put in one 12x28 ft. They are raising clover, vetch, oats and some corn.

Mr. H. W. Vanderhoof, of Sumas, Wash., bought 2 silos last year of the 16x30 ft. size and will soon be ready for as many more.

An absolute air tight receptacle on a solid foundation is the principle involved in the successful make of a silo. The first crop naturally is clover, vetch or mixed grass crop, and the fall crop for the silo should be corn wherever it can be grown successfully.

#### FOLSOM'S YOUNG COWS.

Mr. F. Folsom of Kent, Wash., bought a large number of young Holstein heifers last year, of very high grade milk strain, and has wintered them through in fine shape.

Most of them are coming fresh dur-

ing the spring months, ready for good dairy work. Having about 100 choice animals from which to select those who wish to buy high grade Holsteins will have an opportunity to pick out some valuable cows from this young herd.

#### WHAT IS ACCOMPLISHED BY TESTING COWS.

By M. S. Schrock, at annual convention Oregon State Dairymen's Association.

1. The test not only points out the poor cows, but the good ones also. Many cows considered only average are found to be the best in the herd when real records supersede the guess system.

2. Under the guess system, and in the absence of records, sentiment is a strong factor in selecting the cows worthy of being retained in the herd. also the cows from which heifers are to be kept. A cow's disposition and temper enter seriously into the matter. With accurate records such minor things are overlooked in the real producers, and a bond of friendship develops between the milker and the producing cow.

3. Persistency of milk flow, the one qualification that outranks all others in worthy cows, is very difficult to recognize under the guess system, but it is easily brought to the owner's attention through the test.

4. The test records are very valuable in later years as references, both in feeding and managing the herd.

5. The test develops better feeders, deeper thinkers, better dairymen, and better dairy methods. It checks overfeeding as well as underfeeding, and insures greater net profits.

6. The monthly visit of the tester, the conversations held with him, and the tendency it creates to increased discussion with the neighbors, help to broaden the mind, induce reading and studying—in fact, make better dairymen and better citizens.

7. Cows from regularly tested herds sell for more money, and so do their offspring.

8. The hired man takes greater interest in his work.

9. The most important of all is the fact that no one other factor so interests the boys and girls and attaches them to the farm and the dairy as that of accurate and systematic records. For boys and girls nowadays

## Holsteins of Pontiac and Hengerveld Dekol Breeding



All dairymen who are realizing a fair measure of profit are using pure bred sires and to get a start with pure breeds, they buy as they can, one or more registered females. Every cow in the dairy herd should show some definite measure of profit; then with registered stock there is established value worth while. Our registered herd from which we are offering some surplus stock is showing an excellent margin of profit in every-day dairy work. We can spare a few surplus young cows, heifers and bulls, all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

## Registered **H**OLSTEIN and High Grade **C**ATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

**H. S. ROYCE**

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

**CRESCENT HILL FARMS**

Walter J. Domes, Prop.

McCoy, Oregon.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,**  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## Extraordinary Offer

I will sell the increase from my great Register of Merit Jersey cows, sired by the greatest bulls in the West. YOU need this stock to strengthen your herd or as a foundation for great producers. This stuff can win consistently in the show ring with anything in the country. Prices \$100 and up. Special price on small herd, including bull.

For pedigrees and information, write

**E. L. BREWER**  
Satsop, Wash.

#### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent.

Price on application.

**JEFFERY HILTON,**  
Marysville, Wash.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT** Dungeness, Wash.

## Registered Jerseys

**BERKSHIRE  
SWINE**

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

**A. G. WOODWARD**  
Route 1, Box 12 Fairbanks, Wash.

**FRIESIAN-HOLSTEIN CATTLE**—Great producers of milk and butter fat and very prolific. Some of my records will astonish you. A few youngsters to sell at reasonable prices. Write for particulars and mention this paper. N. P. SOR-ENSON, Bellingham, Wash., R. F. D. 2.



are taught definite things in a systematic way. They would like to have a chance to apply on the farm the things they learn in school. Our old-fashioned methods do not interest them; the newer ones do. If you do not believe that records of dairy cows are interesting to children, try it on any of your youngsters and you will soon be convinced.

#### TESTING REGISTERED JERSEYS.

The American Jersey Cattle Club has instituted a system of authenticated tests. Its reasons for doing so are as follows:

1. To raise to a still higher standard the average excellence of the Jersey cow.

2. To secure an additional authoritative and permanent record to which reference can be made in the selection of breeding animals.

3. To put on record meritorious cows and bulls, the first judged by dairy performance, the second by the dairy performance of their daughters.

The Club stands for the improving of the breed of Jersey cattle in America.

#### How to Proceed.

Year's tests of registered Jersey cows must be authenticated by testing for its fat content a sample of the milk of every milking during two consecutive days, or forty-eight hours, in each calendar month, or in each period of thirty or thirty-one days, without regarding the calendar divisions.

This authentication must be made by a supervisor appointed by, or approved by, a State agricultural college or experiment station.

The owner is required to weigh the milk of every milking, set same down on a form furnished gratis by the Club, and to mail this report to the Club office each month.

The owner must each month pay the bills for test supervision received from the station sending the test supervisor.

Write Prof. A. B. Nystrom,  
Pullman, Wash.

#### SILAGE AND ITS VALUE.

On our high priced land in the coast section the silo is indispensable for successful dairying and stock raising. During past years from 35 to 50 per cent. of the early forage crop has been ruined because of indecent curing weather at cutting time. With the silo not a forkful of any clover or other grass need be wasted. The first cutting can be made at a fixed date with a silo, rain or shine and the ground

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

POLAND CHINA PIGS

Write for prices.

**E. L. Lloyd**

Box 466

Monroe, Wash.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

A. BENSON

Lynden, Wash.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

MRS. D. F. ALWARD,  
Orting, Wash.

prepared for the second crop. Many farmers in Western Washington are preparing to proceed on that basis this year.

Mr. J. V. Shepard, Seattle, has figured that from a nutritive standpoint alone in comparing ensilage with hay, grain, roots, and pasture, basing them on their present market value, corn silage is worth from \$6 to \$7 per ton. To this should be added several factors, the value of which is hard to determine such as succulence, aid to digestion, convenience in feeding, soil fertility, economy of storage space, and additional stock carrying capacity of the land, which taken into consideration makes silage worth from \$7 to \$9 a ton, depending on local conditions.

The estimated cost depends on crop grown value of land and facilities for handling. It has been estimated at from \$.50 to \$3.00 per ton grown and put into the silo, therefore it is not difficult to see why leading dairy farmers in the Coast section are of the unanimous opinion that the silo is one of sure helps to profitable dairying.

Every farmer building a silo will do well to figure on devices for handling ensilage, with the least possible labor.

At one of the leading experiment stations one man went up in the silo, threw down the ensilage, put it in the feed carrier and fed forty cows in

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SALE

Upwards of 100 HEAD VERY CHOICE 2 and 3-year-olds, now coming fresh, out of pure bred sires and good producing dams; they are of good dairy type and in line to make large producers. They were selected as youngsters last year, have been well wintered and are in excellent condition of health and flesh. Their calves are nearly full pure bred. Early buyers have opportunity to make some choice selections. For further particulars and prices write or call.

**F. F. FOLSON**

KENT

WASH.

## Waikiki Farm

Breeders of

JERSEY and Ayrshire Cattle  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

"WE PURCHASE and always pay best prevailing market prices on all kinds of LIVE STOCK, HIDES, PELTS, TALLOW, and POULTRY, and will quote you if you will advise us what you have to offer for sale. In return we offer to sell you our New Process Beef Scraps for chickens. Bone Meal; Granulated Bone; Digestible Tankage for hog food, and all kinds of fertilizers.

We patronize Home Industry and ask you to reciprocate."

CARSTENS PACKING COMPANY

Please mention this paper

Tacoma, Washington

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

## Crystal Springs Farm

A. J. C. C. Jerseys—Young bulls for sale. Heavy producers and prize winners. Also Poland China hogs.

GUY C. CHAPMAN,  
Pomona Wash.

#### REGISTERED JERSEY HEIFERS

Three solid colored heifers fifteen months old; all out of Register of Merit cows—two are prize winners. Price on application.

DAVID C. DILWORTH

Buckeye, Wash.

Please mention this paper

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best.

The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

#### FOR SALE

#### Guernsey Bulls

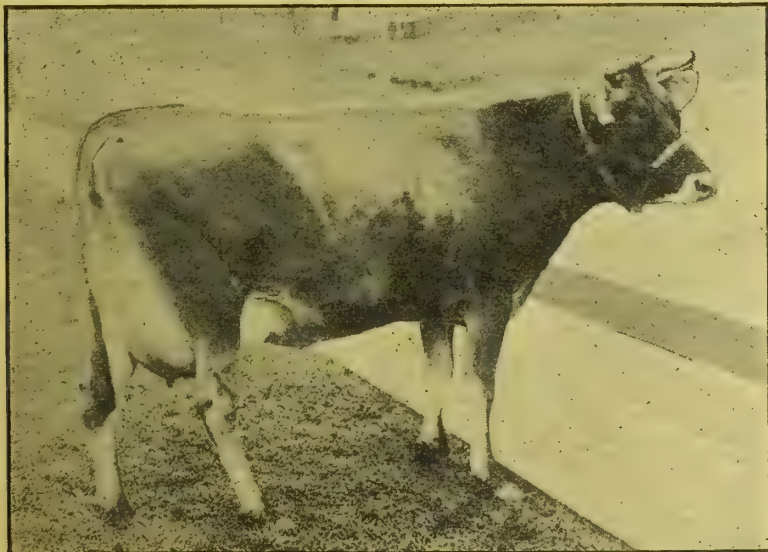
Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

S. M. SHIPLEY, Proprietor,

Haller Bldg., Seattle.



Jersey Cow, Lad's Lydia S., No. 252316, born, Princeton, N. J., Sept. 21st, 1910. Owned by Grasmere Company, Chehalis, Wash. She is a persistent milker, will develop 40 to 45 lbs. maximum and ideal dairy type.



an average period of thirty-five minutes. To feed the same cows alfalfa hay required two men and a team one and a quarter hours to go to the field, haul it in and throw it in the yard or rack, a great saving in both time and expense in favor of feeding silage.

Ensilage is just as valuable for feeding beef cattle, hogs, sheep, chickens, and horses as it is dairy stock and there isn't a piece of land in this Northwest but what will produce some sort of crop that will be increased in value by turning it into silage.

Mr. Shepard suggests that if fruit

growers will pull out some of the trees where they are too thick or where growing on unsuitable land and plant alfalfa and corn and feed it to good dairy stock, they will realize more per acre than they can otherwise; and if our hay growers will ship their alfalfa out in 10-gallon cans in the form of cream or milk they can make their hay crops more valuable and at the same time build up the land by putting back into it in the form of stable manure what they are taking out.

The dairy cow backed by a good silo is what is going to build up our land and make our Northwest the richest of any in the Union.

## Cows and How to Handle Them

According to Prof. Wilbur F. Fraser of the dairy farming division of the Illinois University, one third of twenty-one million herds of cows in the United States are kept at a loss of \$50,000,000. Or in other words, in 7,000,000 herds the cows each consume over \$7 worth of feed more than the value of their dairy products. Another third of the cows in the country are making only the moderate profit of \$7.85 each while the last third of the total number pay \$26.82 per head or a total of \$187,000,000 annually.

While the Horticulturist and Dairyman has reason to believe the average return per cow in the state of Washington is above this estimate, the net profit is far below what it should or could be with good cows rightly handled.

Many of our readers realize that the profit from dairying is too small but are unable to devise or apply a remedy.

### The Start for Improvement.

"If a dairy cow, kept under average farm conditions, does not produce 4,000 lbs. of milk and 160 lbs. of butterfat each year, the dairyman caring for her is losing money every year she is kept, and yet cows producing this amount of milk or less are bred on from generation to generation. When we consider how easy it is to apply the dairyman's yardstick, the scales and Babcock test, to every herd and then realize that less than one per cent. of the two million dairymen in the United States are using this yardstick to-day, it is not to be wondered at that such conditions as those mentioned above continue to exist.

"Every dairyman should keep a record of the production of each individual cow and those producing less than the above mentioned amounts of milk and fat should be sold at once. Each dairyman should set a minimum standard of production, which should be raised from year to year, and should replace all cows not coming up to this with better producers. Better cows would increase the amount, and reduce the cost of production so that by receiving even the same price for the product, the dairymen would soon be on the road to prosperity. The value of such tests is shown by the following:

"One herd of dairy cows tested produced an average of 5800 lbs. of milk and 224 lbs. of butterfat the first year. This herd was making an average profit of \$16.60 before they were tested. After four years of testing and weeding out of the poor cows, the average production was

8628 lbs. of milk and 324 lbs. of butterfat, making an increase of 2828 lbs. of milk and 100 lbs. of butterfat, the average profit being \$40.52, or an increased profit of \$23.42 per cow.

### Correct Breeding Faster Progress.

No dairyman can make progress in developing a future herd by raising good heifer calves unless he has a good sire, one with some known established merit preferred. Many farmers know better but they are two shiftless or careless, to plan for definite improvement by means of using sires which will increase the butter fat percentage and milk yield of the future herd.

"The initial cost of a pure-bred sire may seem great, but it must be remembered that he represents one-half of all the qualities, characteristics, capacity for milk production, and everything transmitted to the calves which are to constitute the succeeding herd.

"The pure-bred sire is certain to transmit more of his characteristics to the offspring than will grade cows, and no more economical investment can be made by a dairyman than to spend time and money in obtaining the best one possible. Frequently the penny is held so close to the eye that it is impossible to see the dollar a little farther off, and this is just what a man is doing who has a dairy herd and thinks he is economizing by buying a poor or even ordinary sire. One may have reason to say that he cannot afford to pay a big price for a fine cow, but the same argument does not apply to the purchase of an improved bull, because the sire's influence spreads farther and faster than the cow's."

"From generation to generation the succession of well-selected sires goes on increasing and intensifying the improvement in the offspring of common cows until within a few years they have practically transformed the whole herd at slight expense and more than doubled its profit.

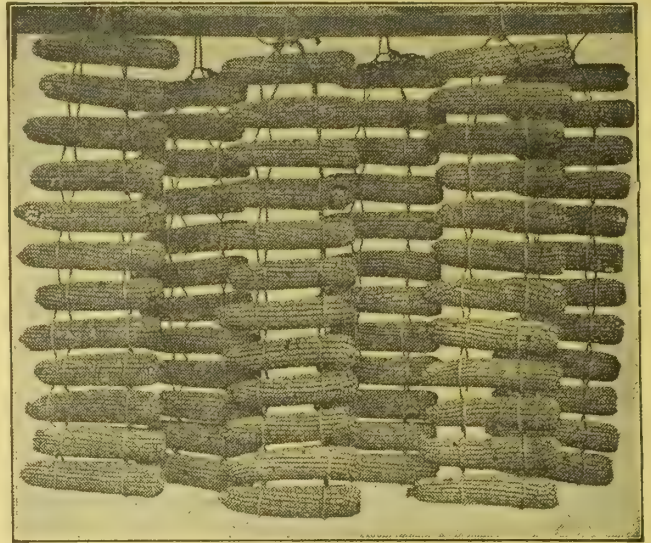
"Every man who has had any experience in the use of a good pure-bred sire from high-producing dams will agree that he was of peculiar value and great economy in building up the dairy herd and that the investment paid, and that most liberally."

There are numerous instances among the dairymen in the State of Washington where by the use of a good sire the herd has been graded up to an increased average production which in the course of 4 or 5 years would pay for the cost of the sire several times.

The work of breeding was carried out according to well defined principles.

## More Sludstrup Mangel Seed Arrives

The demand for our Studstrup Mangel seed was so great last month as to clean up last year's supply, but another thousand pounds arrived early in March, which will go rapidly according to the numerous orders coming. It is evident there will be extensive planting of this the peer of the root crops for feeding purposes in the Coast section. Make early application for the needed supply.



PRIDE OF THE NORTH CORN

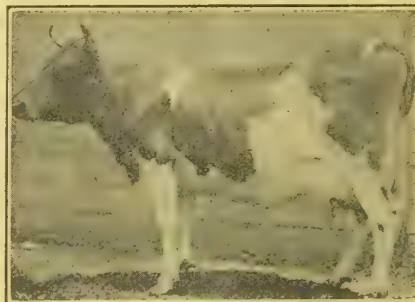
Seed especially adapted for ensilage growing in the Northwest. Samples for test on application.

There are many important facts in our catalog it is essential for planters to know. Don't wait—send for a copy today, and mention the Northwest Horticulturist.

**AABLING - EBRIGHT SEED CO.**

89 Pike Street

Seattle, Wash.



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**

Box 34, Milltown, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**

Montesano, Wash.



**The World's Best and Most Nutritious Animal Feed**

CONTAINING

**46% PROTEIN AND 10% FAT**

**UNEQUALLED FOR  
MILK COWS, POULTRY  
and Farm Animals**

The U. S. Agricultural Department in Farmers' Bulletins No. 58 and 372 states:

"A BUSHEL OF SOY BEANS IS AT LEAST TWICE AS VALUABLE FOR FEED AS A BUSHEL OF CORN."

"It is almost without an equal as a concentrated feed."

"Proteina" is sold by all dealers. Send for literature and further information.

Pacific Oil Mills, Seattle, Wash.

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.

J. W. Clise, Owner

**WILLOWMOOR FARMS,  
Redmond, Washington**

## PUGET SOUND HERD

Holstein-Friesian Cattle — Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years, 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

Seventy-five A. R. O. cows in herd. All bulls for sale are from official tested dams. Write for prices and mention this paper.

**Wm. Bishop, Chimacum, Wash.**



ples, keeping on with the same breed once selected.

The expense is not so great to raise calves as many dairymen are inclined to believe. Prof. Fraser has proved by actual feeding trials that \$3.50 worth of whole and skim milk will successfully feed a dairy calf until it is able to digest a grain ration and thrive without milk. The calf meals now on the market furnish a good substitute for butter fat at less cost.

There are four reasons why dairymen should select or use good sires and raise the heifer calves, says Prof. Fraser.

"First, from the dairy cow as from no other animal, an absolute and complete record of performance can be secured upon which to base the selection.

"Second, the dairyman knows the percentage.

"Third, the dairy cow is largely made or unmade the first year of her life, and by feeding calves properly the dairyman is able to develop them to their greatest capacity and secure cows of more efficiency.

"Fourth, by replenishing the herd with home-grown heifers, the dreaded diseases, contagious abortion and tuberculosis, may be largely eliminated.

#### Next the Feeding Problem.

A large amount of the unprofitable cows are underfed. This has been demonstrated by careful experiments carried out for several years where, with judicious feeding, a certain herd was built up from a loss margin to a good profit margin. No matter how good the cows if underfed, they cannot produce any profit, and when the cow is capable of yielding 300 lbs. butter or over, a year, she requires feeding plans carefully arranged ahead that at no time may she be short of feed composing the necessary elements for milk production at as low a cost as can be arranged.

"Crops must be grown, the combination of which not only increases the milk production, when fed to dairy cows in proper proportions, but soil values as well.

"There is as great a difference in the amounts of food value per acre produced by different crops as there is in the milk-producing capacity of different cows.

In the Pacific Northwest, fortunately, the leguminous crops are thoroughly at home and these are rich in protein and at the same time soil builders. It takes but a few years to enrich any soil in the coast section with clover crops and dressings of lime, followed with peas, vetch and then a crop of corn for ensilage. The introduction of the silo is working a revolution in the feeding methods of dairymen. With clover, vetch, peas, oats, and corn ensilage, there is little to buy except beet pulp, a better and cheaper conditioner than bran. In the irrigated districts alfalfa is the soil builder and the protein forage crop and with corn ground or made into ensilage a cheap and abundant dairy feed of the best quality is produced.

This year of high priced concentrates will be the means of compelling farmers to seed more of the leguminous crops and to plant more corn. Many farmers in the coast section of Washington are pulling out some stumps, doing clearing little by little and are enlarging their clover pastures. Silos are going up

by the hundreds and there is an unprecedented demand for seed corn.

There is also a greater desire shown to test out the unprofitable cows. Dairymen who can not do the work alone are uniting to form cow testing associations. The state is helping by sending out Prof. Lashbrook to organize these associations and in some instances the county agent is helping to carry on the work.

Then again a few are buying pure bred sires, but far too slow for the best interests of dairymen themselves. Capital is anxiously wanting for more thrifty methods in dairying. With thrift, common sense, care bestowed, a plan to use a sire whose daughters will be better producers than their dams, a practical economic feed plan, and there is no better security for capital than such dairy herd owner. He can hardly fail to rise on the ladder of prosperity. Fortunate is the man who has good cows and knows how to handle them.

Some one is likely to write a declaration of the United Countries of Europe, sooner or later. Why not make preparations for a larger patriotism at once? It will require great pressure from many parts of the world and the work can not be started too soon.

#### JOHNSON'S HOLSTEIN HERD.

Mr. Albert Johnson, of Scappoose, Oregon, has been building up a Registered Holstein Herd which is becoming noted for the amount of blood from world record cows, Colantha 4th's Johanna and Grace Fayne 2d's Homestead. Mr. Johnson has had two bulls that infused this blood in his herd, one of them being purchased just before Grace Fayne 2d's Homestead made her world's record.

Mr. Johnson will be remembered as the man who paid \$1025 for the Hugh Nisbet bull, Segis Riverside Pontiac, a brother to the \$20,000 bull calf and the \$50,000 bull.

He has a large number of bull calves whose dams carries the blood of these noted families.

Van Woerden and Fisher of Thomas, Washington, recently sold 15 head of high grade young Holstein heifers, bred, for \$150 each, indicating that their grades are well up near the ideal high producing type.

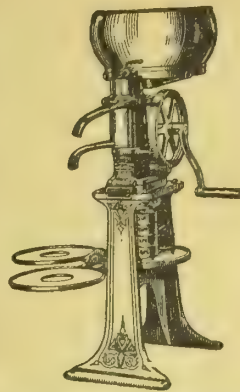
## STOCK

#### ADVANTAGES OF COMMUNITY BREEDING.

Prof. Wm. Hyslop, Annual Husbandry State College, states that in the vicinity of Prosser there are from 20 to 30 herds of pure bred Duroc-Jersey hogs. Breeders within the state and outside, have begun to realize what Prosser can do along these lines. There, a carload of Duroc-Jersey sows may be purchased at very little expense of time and money. There the breeders cooperate and are mutually helpful, and the system reverts to the benefits of all concerned. The individual advantages are subordinate to the interests of the community, the policy being to insure the buyers finding the animals sought, each owner helping his neighbor to make a sale in case he himself has nothing to suit.

## THE ANKER-HOLTH

(A DIFFERENT SEPARATOR)



The ANKER-HOLTH Cream Separator is the only separator with a bowl guaranteed never to get out of balance.

The ANKER-HOLTH Cream Separator is the only separator with a complete splash-oiling system, not an oil cup or oil hole, no oil can necessary. The spindle in the ANKER-HOLTH is not fastened to the bowl. The Anker-Holth has a bowl that is easy to handle and to clean. The shelves can be attached or detached in one second.

The Anker-Holth is the closest skimmer made and is fully guaranteed. We will establish a live agent in every community. Write us for full information.

The J. C. ROBINSON CO.

43 First St., Portland, Ore.

#### Electric Light Farm

### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tubercule tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

### Chicona Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop.

CHINOOK, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1

Lynden, Wash.

**FOR SALE**—Pedigreed O. I. C. Hogs \$15 each. Wild and Bronze Turkeys, eggs 25c and 35c. Pure bred White Leghorns eggs 15 for \$1.00, 100 for \$4.50. E. Y. SANDERS, Roy, Wash.

#### COLD PRESSED COTTON SEED

The Balanced Stock Feed Protein, 26.88; Sugar, 27.95; Moisture, 12.80; Fat, 5.93; Ash, 4.54; Fibre, 21.90.

**\$7 PER TON CHEAPER THAN BRAN**

Recommended by the Agricultural Department. Cotton Seed is a thoroughly proven feed in the South—

**IT IS THE COMING FEED HERE**

Write for sample and literature



L. C. SMITH BUILDING SEATTLE

We Make a Specialty of Alfalfa in Carloads

When different breeds and types are represented in a community partisan sentiment is almost certain to prevail. Each breeder can not accomplish alone what might be possible by unity. Furthermore, their offerings in any one line are not sufficient to attract the best buyers.

#### THE BROOD SOW.

Pork producers are in a liquidating humor and are ready to respond to advances in price. The hog market still continues at a low ebb and the situation is aggravated by the top-heavy grain market. Professor Wm.

**SILVER BIRCH FARM**  
**BERKSHIRES**  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3  
NEWPORT, W.V.

### O. I. C. Hogs

#### English Shire Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

### HAMPSHIRE HOGS

Choice young stock of good breeding for sale at all times. Write for particulars.

**HIGHLAND FARM CO.**  
Underwood, Wash.

## Berkshire Hogs

ANY AGE

Do you want some prolific money-making Berkshires? Then make application as early as possible. Prices very reasonable.

PETER HANSON

Box 62, East Stanwood, Wash.

**BEGIAN HARES** — Young bred does; also fowls, Sicilian Butter Cups. F. H. MEWZEMER, Yew St., Olympia, Wash.

### "B. K. M. BERKSHIRES"

Any pig we ship, may be returned if not satisfactory when it reaches the purchaser, and we will refund purchase price.

Good pigs \$10.00 to \$15.00 each.

**WOODLAND FARM**

Lacey, Thurston Co., Washington

**BOOK ON DOG DISEASES**  
**And How to Feed**  
Mailed free to any address by the Author  
H. CLAY GLOVER, V. S.  
118 West 31st Street, New York

**BERKSHIRE PIGS**  
Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.  
ALBERT C. HERRE  
Route 1  
Everson, Wash.

**AUCTIONEER**  
Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.  
GEO. A. GUE  
North Yakima, Wash.

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. GEO. W. HAYTON, Mt. Vernon, Wash. R. 3, Box 73.



Hyslop, Animal Husbandman of the State Experiment Station, states that there is no need to be panicky and to sell when the market is in a semi-demoralized condition. To the world cataclysm now occurring in Europe may be attributed the sharp decline in hog stocks since October, 1914. Feast always follows famine, so it behooves those forward-looking hog growers, who have retained their breeding stock, to give them the best possible care, in order that future production may not be so restricted as it would seem at this time.

The essentials of brood sow management may be briefly summarized:

1. Provide suitable food, but do not over-feed.
2. Emphasize the protein and ash constituents of the ration.
3. Keep the sow growing thriftily; but do not fatten.
4. Devise schemes to induce exercise.
5. Provide warm, dry, well bedded, well ventilated and sun-lit quarters.
6. Avoid constipation by natural feeding methods, but resort to emergency remedies if necessary.
7. Kill off lice with crude oil, and drive out worms with santonin and calomel.
8. Practice gentleness at all times.

Hog men can not afford to neglect any of these cardinal points when the cost of production is so high.

#### Rations for Sows and Gilts Before Farrowing Time.

1. Barley meal, 75 lbs.; chopped al-

falfa hay, 15 lbs.; tankage, 10 lbs.; rutabagas or carrots.

2. Ground oats, 45 lbs.; barley meal, 45 lbs.; tankage, 10 lbs.; alfalfa hay in racks; rutabagas or carrots.

3. Ground oats, 50 lbs.; middlings, 50 lbs.; alfalfa hay or clover hay.

In the farrowing pen there should be a rail set eight inches from the floor and six inches to eight inches from the wall, to prevent the sow from crushing her pigs. Provide just a small amount of bedding for the sow to make her nest.

For a few hours after farrowing the sow needs no feed other than water which has been sufficiently warmed to remove the chill. After 18 to 24 hours she should have a warm feed of thin shorts slop. After that time the feed should be gradually increased until she is receiving all she requires, but no more. Insist upon exercise.

#### Rations for Sows With Sucking Pigs.

1. Barley, 30 lbs.; oats, 30 lbs.; middlings, 20 lbs.; bran, 12 lbs.; tankage, 8 lbs.

2. Barley, 50 lbs.; shorts, 20 lbs.; bran, 15 lbs.; oil meal, 10 lbs.; tankage, 5 lbs.

3. Ground oats, 50 lbs.; middlings, 50 lbs.; skim milk.

Provide early pasture for the sows and their young. Winter rye and rape are as good as alfalfa, and are ready when most required.

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### POULTRY RAISING WITH FRUIT GROWING.

Fertilizer Value of 100 Fowls About \$30 Per Year on Fruit Bearing Soils.

By H. L. Blanchard—Before the Western Washington Fruit Growers Assn.—Bellingham, Wash.

We are taught that the first sixteen inches of the fine parts of surface soil in New York State contain, potentially, on the average, 7,122 pounds of nitrogen, 6,035 pounds of phosphoric acid and 23,160 pounds of potash per acre, and that nearly all the inorganic constituents found in the ash of plants must be present in the soil and in such forms that they may be set free by the action of the living roots.

Assuming that the physical condition and the drainage of the soil is all that could be desired the orchardist and berry grower must always be interested in the mineral constituents of his soil, as well as its power to retain the necessary moisture, which under proper tillage and care furnish the only guarantee of profitable crops. While there are very many conditions that affect the yield and quality of crops, an insufficient supply of available plant food in the soil is certain to do so.

Among the farmer's first duties then are those of creating and conserving an adequate supply of such available plant food elements as is demanded by the crop being produced—and at the least cost.

This condition particularly applies to the orchardist and fruit grower.

It will be interesting to note the materials used and removed from an

acre by a bearing apple orchard in twenty years as reported by Cornell Experiment Station, New York, in Bul. 103.

|        | Nitro.   | Phos.  | Acid | Potash   |
|--------|----------|--------|------|----------|
|        | Lbs.     | Lbs.   | Lbs. | Lbs.     |
| Apples | 498.6    | 38.25  |      | 728.55   |
| Leaves | 456.75   | 126.   |      | 441.     |
| Trees  | 283.15   | 107.45 |      | 264.25   |
| Total  | 1,238.50 | 271.70 |      | 1,433.80 |
| 1 Tree | 35.35    | 7.76   |      | 40.96    |

The apples appropriated 50.8 per cent of the potash, 14 per cent of the Phos. Acid and 40.2 per cent of the nitrogen, the remaining part of these constituents having been used by the trees and the leaves of the trees.

If all the nitrogen and all the phosphoric acid and all the potash in the first sixteen inches of soil were available to the 35 apple trees and their fruits, according to the foregoing computation, there would be enough of these materials to supply the needs of those apple trees and fruits for the following periods respectively:

7,122 lbs. of Nitrogen would last for more than 115 years.

6,035 lbs. Phos. Acid would last for more than 444 years.

23,160 lbs Potash would last for more than 323 years.

The Cornell investigators assumed that all of the trees were of the same size and fruitfulness, and came into bearing at the same age—thirteen years—that there were thirty-five trees to the acre, which averaged five bushels per tree yearly for five years, the second five years ten bushels yearly, and the next ten years fifteen bushels yearly—a total of 225 bushels per tree, and 7,875 bushels per acre for the per-

## How Can I Make Poultry Pay With Present Prices of Feed?

I receive hundreds of letters asking me that question. If you will send me your name and address, plainly written, I will reply by giving information to answer free of cost.

**Walter Hogan**

Petaluma, Calif.

Author "Call of the Hen."

Please mention this paper.

## CALL OF THE HEN

A most valuable book on poultry, the result of 25 years' careful experiment along the lines of selecting and breeding for high egg production. The illustrations so clearly indicate methods of procedure that any farmer having poultry can follow directions given and obtain results which will very soon more than pay cost of the book. The author, Walter Hogan, has a 1000 flock of 200-egg hens, from careful work of selection and breeding, proving his plan. The book has been approved by leading poultrymen all over the world.

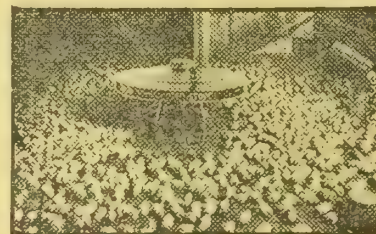
It contains 126 pages, 52 half tones, 15 charts.

The retail price of this book is now \$2. For a short time we are making a special combination, profit-sharing offer to credit any purchaser of the book with two years' subscription to the Northwest Horticulturist & Dairyman, for the \$2. After a thorough examination of the book, if not satisfied return it in good condition and the money will be refunded.

**Northwest Horticulturist & Dairyman**

Box 1604, Tacoma, Wash.

## The Fresh Air Brooder Stove



THIS is our NEW SELF VENTILATING BROODER STOVE. AUTOMATIC TO THE MINUTE. Economy's climax. No more crowding around the stove at night. HEAT EQUAL in all parts of stove room. Petaluma's severest critics pronounce this new wonder the peer of all brooding systems. Bank and our personal guarantee always. Get our latest catalogue. We can help YOU.

**JOHN L. CRAIB**

1022 Western Ave.

Seattle

## Kenworthy's A-ONE Chick Starter Chick Food

It Gives Satisfactory Results.

**W. H. KENWORTHY & SON**

Manufactured By

**South Tacoma, Wash.**

**An Honest Incubator At an Honest Price**

Hot Water, Copper Tank, Self Regulating, Chick Nursery, Safety Lamp, tested thermometer, best construction of *stove* walls all over with asbestos GUARANTEED between each wall. So simple that anybody can make big hatches. Get our catalogue and low delivered price. Brooders from \$2.75 up

**St. Helens Incubator Co., Toledo, Washington**

50,000 WHITE LEGHORN CHICKS Bred for eggs—the kind that make the chicken business a success. Hatchery starts Jan. 1st. Book your orders with us now.

**ST. HELENS INCUBATOR CO.**  
Box 9—H Toledo, Wash.

## Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

**MRS. D. P. ALWARD**  
Orting, Wash.

**FOR SALE CHEAP** — One Petaluma Brooder Stove, with pipe and gasoline tank, complete and in first class shape. **JOHN R. MILLER**, Lacy, Wash.

## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

**FRED A. JOHNSON**  
518 35th St., Tacoma, Wash.



iod of twenty years. At fifty cents net per bushel the twenty years product of one tree would be \$112.50, and of one acre \$3,937.50, or \$5.62 per tree for one year, and \$196.87 per acre per year.

From the data contained in Bul. No. 55, Experiment Station, Pullman, Wash., we make the following calculations, regarding the amount of the mineral constituents contained in the average soil analysis that were taken from Whatcom County soils, which soils compare very favorably with, if not superior to, the average soil of Western Washington, as shown by analyses. We find that the average analyses of seven samples to be as follows, viz:

Nitrogen .29 per cent., or 16,322 lbs. in the first 16 inches of an acre.

.17 per cent Phos. Acid, or 9,982 lbs. from a like area.

.22 per cent Potash, or 12,380 lbs. per acre.

Inasmuch as the standard requirements for Phos. Acid and Potash are 10-15 per cent and 15-25 per cent respectively, the Whatcom County farmer is to be congratulated upon the supply of these important constituents in the soil of his county.

Furthermore, the report shows that the percentage of lime found in the samples mentioned was higher than that found in samples collected from nearly all parts of Western Washington, which is particularly true of the Sumas Valley soils, all of which indicates both a productive and a durable soil.

However, the farmer will remember that only a comparatively small per cent. of the phosphoric acid and of the potash of the soil becomes available to the plants from year to year—approximately one per cent. and one-fourth per cent. respectively. Those who happen to have their orchards located on the poorer soils—soils far below the average in phosphoric acid and potash—will need to adopt some system of fertilization under which a continuous supply of available plant food may be maintained.

In our opinion poultry furnishes the cheapest and most logical solution of the problem. As many as 100 to 500 birds may be kept to each acre of orchard or berries. By their scratching the surface soil may be kept in ideal condition for conserving the necessary moisture in the soil, while their droppings will in a measure supply the plant food elements that the trees and their fruits demand from the soil. The composition of hen manure reveals its great value as a fertilizer in the orchard and berry field as well as on all other parts of the farm—particularly on our poorer soils. Storer gives the following composition, viz:

|                       |       |
|-----------------------|-------|
| Nitrogen .....        | 1.6 % |
| Phosphoric Acid ..... | 1.5 % |
| Potash .....          | .85%  |

It has been determined that hens produced from 2 to 4 ounces of manure daily on the roost—The Mediterranean 2 ounces and the American and Asiatic breeds 4 ounces—or Mediterranean and similar breeds 45 pounds, and the Asiatics and like breeds 90 pounds annually—not including the manure dropped on the range, in the orchard or berry field.

One hundred hens in an acre of orchard or berries would produce 2½ to 4½ tons of fresh manure annually, collected under the roosts. The fertilizing value of the manure depends

very largely upon the care given it—by neglect such value becomes greatly impaired, also by the use of lime on the dropping boards which liberates ammonia. In order to fix the ammonia and improve such fertilizing value equal parts of dry loam or peat with land plaster, or ground phosphate rock is very good. Boxes or barrels in the sides of which a large number of one or two inch auger holes are made make good receptacles for storing and holding the droppings thus secured. It is often good practice to spread the manure directly on the field.

Poultry manure thus secured and properly applied has a value of not less than ten dollars per ton, for fertilizer purposes.

### WORTHWHILE FLOCKS FOR PROFIT.

With egg and feed prices at their present levels it takes some effort to be optimistic. The condition is so anomalous and the whole situation is so largely controlled by events transpiring across the Atlantic that we are justified in assuming that changes for the better will come almost as suddenly as did the present state of affairs.

For a while we thought we had the feed problem well in hand by using kaffir corn as one ingredient of our ration, it being the cheapest feed available. Of late, however, this item has commenced to climb to a point where it is questionable if it pays to feed it.

One thing is certain, and that is that only the heavier producing flocks will be able to stand the strain thus compelling the less productive flocks to be disposed of and thus thrown out of competition with the really worthwhile flocks.

Future poultrymen will insist more and more on heavy producing quality whether breeding mainly for eggs or for meat. The true fancier whatever his aim may be will of course continue to breed for type or what ever other purpose he may be aiming at.

As far as the future of the poultry business is concerned we can not even yet see any sufficient cause to be pessimistic. The European horror has upset the commerce of the world and it is but natural that we should feel it one way or another. We believe that poultry will be scarce a few months hence and we are bending every effort to be on hand for our share when the reaction sets in.

C. WESTERGAARD,  
Hadlock, Wash.

## Facts and Figures

### JERSEYS APPRECIATED.

Mr. Carlyon, Bellingham, Wash., is buying back some registered Jersey heifers at \$300 each from Mr. Ed Cary, Carlton, Oregon, which are sired by St. Maves, the bull sold some years ago by Mr. Carlyon to Ed Cary and which started him on the road to fame and prosperity.

### DEPENDABLE BEE HIVES.

The Brew Manufacturing Company, Puyallup, Wash., has published a very neat booklet and price list on Bee supplies. This firm makes a specialty of the cedar hives and their trade extends to all parts of the Coast and to many interior points. High quality of hives at prices within easy reach to all is the dependable reputation.

Mr. Geo. Ruedy, Colfax, Wash., a pioneer fruit grower and nurseryman of the Pacific Northwest is preparing to attend the horticultural Conventions in

## THE TRAP NESTED WHITE LEGHORNS

NOW IN THEIR TENTH YEAR OF CONTINUOUS TRAP NESTING

### EVERY POULTRY RAISER NEEDS THIS STOCK

HATCHING EGGS, BREEDING STOCK, DAY OLD CHICKS AT MODERATE PRICES  
SPLENDID COCKERELS. BUY ONE BRED FOR EGGS. GRADE UP YOUR FLOCK.  
Order Now. Stock, Eggs, Chicks. Catalogue Mailed Free.

THE TANCRED FARMS.

KENT, WASHINGTON.

### Baby Chicks 11 Cents Each

from the superior quality bred-to-lay  
OAK HEIGHTS STRAIN OF  
L. C. WHITE LEGHORNS

Safe arrival guaranteed. Two hatches each week. Free book on "Raising the Chicks."

### Eggs for Hatching 4c Each

92% fertility guaranteed. Send NOW for free catalog to

### Oak Heights Poultry Farm

The Northwest's Largest Leghorn Farm and Hatchery

R. D. 3, Box 67 Tacoma, Wash.

### SPECIAL SALE OF

Brown Leghorn cocks and cockerels of the very best blood to be obtained in the northwest at \$2 to \$3 each if taken at once.

Are you in need of good stock to head your flock order at once.

FRED A. JOHNSON,

518 35th St., Tacoma, Wn.

**ROCKS, BARRED AND WHITE FLY-MOUTH—ANCONAS—Cockerels for sale; also eggs, \$1.50 per 100; \$4 per 50, and \$7.50 per 100. High fertility, stock first class, price reasonable. Montesano Poultry Farm, John Kale, Prop., Montesano, Wash.**

### Marrow Cabbage

Those who tried it the

last two years are ordering more seed. Don't delay but send at once any amount from 25 cts. to \$1. for a generous quantity.

Descriptive Circular Free.

E. E. MARTIN, Bangor, Wash.

**GOOD REGISTERED BERKSHIRES**—Choice pigs, \$10 each at weaning time. W. D. GOOD Mt. Vernon, Wash.

San Francisco when making the trip to the P. P. Exposition, during August 12, 13 and 14, when the Pacific Coast Association of nurserymen meet and the Pomological Society and florists on date closely following. Mr. Ruedy would like to see more attention given to nut growing.

The Milton Nursery Company, Milton, Oregon, is supplying many new farm homes with trees for domestic purposes this season, and their interstate trade is extensive. Their many patrons serve as good advertisers for dependable trees from this pioneer firm.

Mr. H. S. Royce, Tacoma, has many inquiries constantly coming for choice high grade Holsteins, particularly the kind which is ready for good dairy work, and he is gratified to be in position to meet the wants of these customers in a very satisfactory manner.

### MARROW CABBAGE.

The marrow cabbage tried out at the Western Washington Experiment Station a couple of years ago is proving very satisfactory for the coast section as the following statements to E. E. Martin, Bangor, Wash., from farmers who tried it last year indicate.

"Machias, Wash.: Greatest plant I ever saw for the dairy. An acre of it supports quite a herd. Your seed was A1. J. M. Vetter."

"Portage, Wash.: My marrow cabbage did splendid last year. The ideal plant for dairy or fowls. F. M. Sherman."

"Edmonds, Wash.: Do you still have the Marrow Cabbage Seed? It certainly made good here. Want a larger quantity this year. E. M. Welch."

Novelty, Wash.: Your Giant Marrow Cabbage Seeds certainly gave splendid results for me here. Want a large patch for my herd. Enclosed find list of prominent dairymen in this locality. Send them your circulars,

## HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. DE KALB

De Kalb, Iowa



If you want one of the best all-around fowls bred, try the White Wyandotte. If you want one of the best strains of this variety, try the "REPEATERS."

Hen hatched, strong vigorous stock. Let us make you prices on eggs in single settings or in quantity. Ask for circular.

### THE EVERGREEN NURSERY

Tacoma, Wash.

## COCKERELS FROM GREAT LAYERS

Higher grain prices necessitates greater production per bird. In addition to correct keeping and feeding the surest way to get more eggs is to breed from pedigreed cockerels which have 200 to 250 egg trap-nested White Leghorn mothers. Cockerels of this class sold at \$3 each.

### GEO. R. SHOUP

Route 3 Lynden, Wash.

## Eggs are the Prizes

We breed for.

Trapnested

S. C. White Leghorns

and

Barred Rocks

Day-old Chicks and Hatching Eggs  
Pedigreed Birds

Blanchard Poultry Yards

C. WESTERGAARD, Mgr.

## Partridge Plymouth Rocks

We introduced this breed in the Pacific Northwest from Michigan 6 years ago. Beauty of the Rocks, great layers, excellent for meat. Write for prices on young stock and eggs.

MRS. L. M. HALL  
Puyallup, Wash.

please. John Olsen."

"Crosby, Wash.: The Giant Marrow Cabbage Seed we got from you last year did fine, and our chicks and stock like it real well. Want more seed this year. P. F. Rensch."

"Myrtle Creek, Oregon: I tried your Marrow Cabbage Seed with splendid success. Send me a larger quantity of seed at once. E. Vernon Rains."





Save  
Milk  
Money

Raise  
Better  
Calves

# ANNOUNCEMENT

We announce with pleasure that in response to the demands of our customers, many of whom are leading dairymen, we have installed in our new plant a modern equipment for the production of Calf Meal. We assure you that we put into this meal the same high quality of material that has distinguished our products in the past, and which have won us the confidence of the farmers of the Pacific Northwest. Our customers demanded a reliable local meal for the two following reasons:

First: TO SAVE THE HIGH COST OF FREIGHT ON MEALS SHIPPED FROM DISTANT POINTS.

Second: THE NECESSITY OF HAVING A CALF MEAL THAT IS ABSOLUTELY FRESH.

In **LILLY'S CALF MEAL** you get the finest meal possible to buy with the added inducement of low cost and absolute freshness.

## We Make It Easy for You to Try Lilly's Calf Meal

J. W. Clise, of Willowmoor Farms, Redmond, Wash., breeder and owner of the celebrated registered Ayrshire cattle, uses Lilly's Calf Meal exclusively for raising his calves.

It is very natural that with a new product, dealers are not all supplied. If your dealer does not have Lilly's Calf Meal in stock and you will send us his name we will send you

**25 LB. TRIAL SACK FOR \$1.<sup>00</sup>**  
Prepaid

Prepaid to your depot. This 25-lb. bag will be sufficient to make a thorough test which we know will absolutely convince you that you cannot afford to feed your calves butter fats.

SEND FOR BULLETIN "HOW TO RAISE CALVES"

Experienced dairymen have expressed an opinion that this is a very practical and condensed treatise on calf feeding and raising. We will be pleased to mail you a copy on request.

SEATTLE

**The Chas. H. Lilly Co.**

PORTLAND



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH.,

APRIL, 1915

No. 4

## Silage and Condensers

At the last meeting of the Washington State Dairymen's Association, H. L. Blanchard, Assistant Superintendent of the Western Wash. Experiment Station, stated they had experimented with silage and other feeds in producing milk for the condensery. A certain number of cows were divided into two lots, the one division was fed silage in the ration and the other lot received no silage but roots, and other crops in their feed. The milk was sent to a leading condensing plant, made into the regular condensed milk product, segregated according to markings, the significance of which was unknown to those of the condensery.

After a month's supply, the station staff in connection with the manager's expert of the condensary examined 150 cans. After the testing was over several cans had been discarded but among them not one can made from the milk of cows which had been fed ensilage. The discarded cans were from the milk of cows that had been fed turnips while they were being milked. No ensilage was fed during milking and while if done, that might have caused trouble, the demonstration has proven beyond a doubt and to the full satisfaction of the condensery people as they acknowledge, that silage, properly fed, is not detrimental to condensed milk. The solution of this problem in a satisfactory manner, means very much to the dairymen of the Coast Section. Heretofore thousands of tons of fodder ready to be cut in June have been wasted because there was no curing weather and those under contract to condensing plants were not permitted to feed silage. This embargo has been removed, so that milk from silage fed cows is as popular with the condensers as that from the best of other feeds and now silos are going up in all the condensed milk districts as fast as they can be put in. This virtually means that the production of the Coast Section acreage is nearly doubled for with one crop of clover, or oat and vetch silage and later a crop of corn silage, there will be at least three well preserved crops in two years, instead of two partly ruined crops. There is no place where the silo can serve a greater measure of profit and satisfaction than in the Coast Section.

### GETTING TOGETHER.

Farmers of the Pacific Northwest are slowly but surely getting together to their mutual advantage.

Those who possess thrift and some degree of accuracy in their undertakings are, in many cases, affiliating with others of like force and disposi-

tion. It is action of this kind which is needed more than anything else to command credit either from banks, other money lenders or from merchandise concerns.

Among so many farmers there appears to be a need of some definite plan. In nearly every community some special line of farm operation has taken the lead.

It may be the breeding of live stock, dairying, hog raising, poultry raising, grain growing, fruit or vegetable growing or any two or more of them combined. Such scheme for the general community affords an op-

## APPLE INDUSTRY OF NORTHWEST.

According to a statement issued by the Northwestern Fruit Exchange the average returns to apple growers of the leading fruit districts of the Pacific Northwest for the two best grades, designated "Extra Fancy" and "Fancy," covering the past five years is about \$1 per box. The high market prices were in 1910, 1911 and 1913, and the low in 1912 and 1914. While the experiences of another three years added and averaged would form a more accurate idea of

f. o. b., is variously estimated at from 50 to 65 cents. The question of net profit and the actual value of a bearing orchard is a matter of computation on that basis, and the question of increased net profit lies in figuring on reducing further cost of production rather than to anticipate a higher average net return, though that might be slightly increased.

The second point is the selection of suitable localities for commercial apple growing, and so far as possible to diversify by adopting at least some one other crop which will fit in with the labor involved in commercial apple growing. There is no doubt but that apple growing for the distant markets will continue and that a fair measure of profit will be realized, but those engaging in the industry will do well to observe the average market returns for a number of years and not be misled by the extreme high nor extreme low prices and plan their industrial operations accordingly.

Apple growers located in districts where the product cannot so well be standardized for the commercial fresh fruit trade will do well to figure on evaporating the crop. The dried apple market has been good the past year and with more direct route to the European countries and to other parts of the world there will be a staple market for apples and other fruits in the dried form.

A good apple orchard in the leading districts average about 500 boxes per acre on trees above 6 years of age. Where the yield is not so good of course the net profits are less. It is likely that future operations in apple growing in the northwest will be more closely affiliated with dairying or poultry raising than has been the case in the past.

### PRUNING BUSH FRUITS.

As soon as the crops of currants or gooseberries have been picked the bushes may be pruned, this induces the setting of fruit spurs for another year early in the season. When growing in the bush form, generally the practice on the coast, cut out all the three and four year old stems and do not leave too many. The currant bears most of its fruit on the two and three-year old wood. All canes of either of these fruits should be cut out when they begin to droop toward the ground, and all canes that are weak, says Prof. Lewis. The plant should be reduced to the number of stems that will grow in a vigorous condition. When canes tend to grow gnarly, old and weak, they should be removed. The entire planting should be renewed in from six to ten years. While the bushes will fruit for a longer time the fruit tends to grow too small to be profitable.



A crop of ensilage corn yielding 22 tons per acre, on the farm of Pickering Bros. (See page 76.)

portunity for getting together that would not exist with more diversified interests. It is the privilege and duty of each individual to have some part in the leading community industry if not actively a producer, at least to boost for it, and if some line of activity is undertaken, then assume definite purposes and do the work well. Getting together along this line will make the work in farming communities easier serve to lighten the burdens of the individual, and is a sure foundation on which to command credit when needed, at a reasonable charge.

the average basis price on which growers may accurately figure, the five year period is a fair indication of what the apple growers will obtain on the average from the commercial markets. This is for good varieties, packed, more than half of them wrapped and highly free from any blemishes, in other words fairly well standardized.

There are two important lessons for growers to heed from this experience. The principal one is that of cost of production. In the leading commercial apple districts the cost of growing a box of apples ready to



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

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## CONDITIONING SOIL FOR CORN.

Those who have had a high mea-  
sure of success with corn for en-  
silage in the northwest are careful  
to put the ground in the very best  
condition possible before planting.

First is the plowing carefully done,  
then the spring tooth harrow is used  
immediately and that is followed by  
a smoothing harrow. After such  
treatment and before planting one  
farmer disked the ground six times,  
crossing first one way then another.  
After harrowing again the seed bed  
was in as fine a condition as could  
be wished for a garden. His yield  
was over 20 tons per acre and there  
was a satisfactory margin of profit.  
from the milk of ensilage fed cows.

At corn planting time it is very  
important to have ground thoroughly  
conditioned. In most dairy localities  
it pays well to raise silo crops when  
the work is well done.

## BERRIES AND JUICES.

The Puyallup and Sumner Fruit  
Growers Association, realizing the  
great demand which will be created  
for fruit juices when the saloons are  
closed in the Northwest states, has  
added to its plants, laboratories for  
the manufacture of soda fountain  
syrops, crushed and whole fruit pre-  
parations. It will take an immense  
acreage of red raspberries to make  
sherbit enough for those who are  
likely to place orders when once the  
beverage is introduced, but the berry  
growers are preparing to roll up  
their sleeves and will undertake the  
great task of quenching the thirsty  
public.

It may require more stump pullers,  
a run on the nurseries for plants  
and a doubled berry picking force,  
but there will be strenuous efforts  
made to meet imperative demands.

The berry industry is working  
along right lines and its future devel-  
opment has never been more promis-  
ing.

## POTATO GROWERS TO CO-OPERATE.

It has been suggested that potato  
growers might derive a much better

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

margin of profit by forming co-opera-  
tive associations. First to grow a  
potato which is highly palatable,  
second to grade and standardize the  
crop. The potato next to flour is  
in every day demand. Its consump-  
tion would be greatly increased if  
the quality was improved and if de-  
livered in more attractive grades.

Let us learn from the growers who  
supply the overland railway com-  
panies. Their potatoes are planted  
and grown in a manner to mature  
within a definite number of growing  
days. The crop is dug and carefully  
be produced in standardized form and  
graded and delivered at a satisfac-  
tory and dependable price. Potato  
growers cannot control the markets  
altogether but can do much to im-  
prove it, to their own profit.

## SCRUB COWS AND LIKE DAIRY- MEN.

There is an old saying that birds  
of a feather flock together. This idea  
may be very striking with reference  
to industry. Some one has sug-  
gested that pure-bred or cows of  
high records would not be satisfac-  
tory in the hands of scrub dairy-  
men. On the other hand dairymen  
who have higher than scrub cow ideas  
will not be long in replacing them  
with better stock, no matter how  
low is their bank account.

## CLEANLINESS OF MILK.

Geo. Grindrod, Chief Chemist of the  
Pacific Coast Condensed Milk Com-  
pany of Kent, stated to the Wash-  
ington dairymen at their last meeting  
that the production of milk for con-  
densing purposes requires scientific  
cleanliness. He might have added  
also for good butter.

He warned dairymen against three  
positive sources of infection as a  
cause of bad milk. First, dust from  
hay or other sources. Second, dirt  
which drops off the udder and side  
of the cow. Third, failure to scald  
milk pails and other utensils just  
before milking.

## DRIED APPLE MARKET.

The market for dried apples in  
the eastern states is better than  
usual, prices being quoted at 7 to  
9 cents per pound and the demand is  
said to be good. There was con-  
siderable buying from abroad and  
from the south. Indications are that  
the dried fruit market will be good  
for the next few years for apples,  
pears and prunes. Pacific Coast fruit  
growers will do well to keep in close  
touch with dried fruit market quo-  
tations and make any needed pre-  
paration to dry a surplus part of  
this years crop.

Quarantine orders issued April 5th  
indicate that the foot and mouth dis-  
ease is under better control. No new  
cases are in evidence and several dis-  
tricts, formerly infected, report a  
clean condition.

## TOMATO BLIGHT.

The yellow blight of the tomato  
continues to have attention of plant  
pathologists without any very definite  
results in the matter of its control.  
From the various and many experi-  
ments conducted the past 20 years, the  
observer is lead to infer that the un-  
derlying trouble is caused by the pot-  
ash or excessive alkaline element of  
the soil in connection with a high tem-  
perature. Where the proportion of pot-

ash has been diminished by the addi-  
tion of stable manures the blight is  
less destructive than on soil not so  
treated.

## NURSERYMEN'S MEETING DATE.

The Pacific Coast Association of  
Nurserymen have set August 12, 13  
and 14 at San Francisco, California,  
as their next meeting date. Imme-  
diately following will be the meet-  
ings of the American Florists and  
the American Lomological Society.  
This gathering of horticulturists from  
all over the country and from differ-  
ent parts of the world will, perhaps,  
be the largest number ever assembled  
at one place on or about the same  
time. The horticultural features of  
the Exposition will at that time be  
a leading attraction.

## SEED GROWING.

There is a good opportunity for a  
number of our readers to make money  
from seed growing. Corn ensilage  
will be grown by the thousands of  
tons in the Coast Section and it is  
important to have acclimated seed,  
which dairy farmers are not likely to  
grow for themselves. Who will under-  
take to produce a high testing seed  
of the leading varieties? There will  
be no trouble about marketing ac-  
climated seed corn of high quality  
when the producer makes known  
what he has to sell.

## CONDENSED MILK FOR SCOURS.

Guy M. Richards, Manager of the  
Greenbank Farm, has found from ex-  
periment that condensed milk was  
good for a severe case of scours  
which afflicted one of the calves in  
their herd.

Eight ounces of the milk was given  
in about two quarts of as hot water  
as the calf could stand. The dose  
repeated twice at intervals of six  
hours, then whole milk was added  
and the calf soon recovered.

## ZINC ARSENATE

### AS INSECTICIDE.

Zinc arsenate has been used both  
in the paste and powder forms with  
much success for the belted cucum-  
ber beetle, as well as for some other  
insects of this class. An entomologist  
of the Department of Agriculture  
states it has proved to be one of the  
most effective sprays for use in humid  
climates, as it appears to last longer.  
No other arsenical has given better  
results, and in the majority of cases  
the mortality has been higher than  
with any other arsenical spray. The  
powder when used with cactus to  
make it adhere is to be preferred for  
general use over any arsenical now  
on the market. This spray in the  
writer's opinion surpasses in lasting  
qualities any of the arsenicals and at  
the same time gives a higher mortal-  
ity. In action it is somewhat slower  
than Paris green, but it gives better  
results in the end. The writer would  
not recommend, however, that zinc ar-  
senite be used on plants that are near-  
ly ready for market, for the poison  
does not wash off easily.

The cactus solution has a tendency  
to ferment, so that experiments were  
made to determine preservatives. It  
was found that the addition of dis-  
solved copper sulphate in the amount  
of one pound to 28 gallons of the  
cactus water deterred fermentation so  
that the solution kept perfectly for  
about four weeks. The copper sul-  
phate practically did not interfere  
with the effect of the arsenicals. Sim-

ilarly it was found that the addition  
of one-fourth pound of salicylic acid  
to 56 gallons of cactus liquid or one-  
fourth pound of sodium benzoate dis-  
solved in a small quantity of alcohol  
and added to 50 gallons of water pre-  
served the cactus mixture.

## FILBERTS IN THE NORTHWEST.

Dear Mr. Tonneson:

I am glad you call attention to the  
possibilities of filbert culture in this  
section. *Corylas rostrata* a variety of  
hazelnut with the involucre prolonged  
into a long beak is indigenous all  
over this country, and moreover it  
grows on loam or sandy gravel equal-  
ly well, anywhere when it gets a  
chance. We need not hesitate to  
plant filberts on any kind of soil we  
may have. We have an acre con-  
taining 12 varieties, now three years  
planted from two year stools. They  
are on poor soil, a light sandy loam  
with some gravel and the hardpan  
less than two feet from the surface.  
They seem to thrive. The Barcelonas  
and Red Avelonas had some nuts  
last year, and this season several  
varieties bloomed profusely both in  
the staminate and pistilate parts. The  
pollen is wonderfully plentiful and  
fine as smoke. A few catkins shaken  
above a bush will envelope it with a  
cloud of pollen dust. The only trou-  
ble I fear is with pollination. In our  
climate the catkins develop so early  
that the pollen falls before the pis-  
tilate parts emerge from the buds.  
If we could have a late blooming  
variety mixed with our planting, the  
wind would do the rest and we could  
have heavy crops of nuts anywhere  
we might plant.

Our native filbert blooms too early,  
usually in early February. Shade  
may be good, but ours do well enough  
between rows of young pear trees.  
In my native state, Wisconsin, the  
hazelnut grew on the most sterile  
hills which we considered worthless  
soil. Here, on Vashon Island we  
have trees 30 or more feet high and  
six inches or more in diameter.

Will anybody knowing of a variety  
which will hold back its catkins so  
that they do not come into bloom be-  
fore the middle of March please make  
the matter known.

STEPHEN HARMEING.

## OWNERSHIP STATEMENT

As required by Act of Congress,  
Aug. 24, 1912.

The name of the Editor, Manager and  
Publisher is C. A. Tonneson, Tacoma,  
Washington. Not incorporated and  
there are no bondholders, mortgagees or  
other security holders holding 1 per  
cent or more of any security.

(Signed) C. A. TONNESON.

Subscribed and sworn to before me  
this 29th day of March, 1915.

DANIEL MCGREGOR.

Notary Public, residing at Tacoma.

## CABBAGE WORMS AND CABBAGE APHIS.

Cabbage worms and cabbage aphis,  
or lice, are found in more or less des-  
tructive numbers wherever cabbage  
and other cruciferous crops, such as  
turnips, rutabagas, cauliflower, etc.,  
are grown. Some seasons they are  
much more destructive to these crops  
than others, owing to various causes,  
such as the weather conditions or the  
presence or absence of the various  
parasites and predaceous enemies,  
which sometimes keep them reduced  
to a minimum.

The green caterpillars, or worms,  
found on cabbage and allied plants,  
are too well known to need any de-  
scription. They develop into the com-



mon white, gray or orange butterflies with small dark spots on their wings. They are seen frequently during the summer flying about the garden and clover and alfalfa fields. The butterflies lay the eggs on the cabbage, which hatch into the caterpillars.

The State Experiment Station at Pullman advises that the best method of controlling these worms is to spray the plants before they are half grown with arsenate of lead and soap, prepared as follows: Arsenate of lead (paste), 3 oz., soap,  $\frac{1}{2}$  bar; water, 4 gal. This spray should be applied whenever the worms become abundant enough to justify it. Usually an application about the first of July and another two or three weeks later will be sufficient for early cabbage. Late cabbage may require an additional application later.

The cabbage aphids are also very well known to every gardener. They live over winter in the egg stage or as mature aphids on the old plants left in the garden during the winter. A great many generations are produced during the summer and fall, so that by late summer those plants only slightly infested in the spring may be seriously injured by these pests unless destroyed by their parasites or predaceous enemies. They are often kept in control by the ladybird beetles and the larva of the Syrphus flies.

The best method for controlling the plant lice is to spray the plants with tobacco and soap mixture prepared as follows: Blackleaf-40, 2 tablespoonfuls; soap,  $\frac{1}{2}$  bar; water, 4 gallons. The soap is necessary in order to make the spray spread evenly and penetrate the mealy covering of the lice.

Inasmuch as both worms and aphids are nearly always present at the same time, it is often desirable to spray for both, and this can be done with a combined spray prepared as follows: Blackleaf-40, 2 tablespoon-

fuls; soap,  $\frac{1}{2}$  bar; arsenate of lead, 4 oz.; water, 4 gallons.

M. A. YOTHERS,  
Assistant Entomologist,  
Washington State Experiment Station.

#### STUMP PULLING.

The A. J. Kirstin Sales Company has removed from Salem, Oregon, to East Morrison St., Portland, Oregon. The new location affords better facilities to fill orders with despatch, besides a larger number of prospective stump puller buyers are afforded the opportunity of inspection of the implement when on other business in the Oregon metropolis. The Kirstin Company is doing an immense business.

#### CORN SILAGE AT ENUMCLAW.

Ira J. Pearsall, Enumclaw, Wash., has been growing corn for the past nine years on his farm and is in possession of some valuable acclimated seed. Last year he bought two silos of the Holland Cook Company, Tacoma, 120 tons capacity each, and made sufficient ensilage to feed over 60 head of cows.

The silage together with clover and alfalfa hay makes a good balanced ration for the milk herd, and they are doing well.

#### NATIONAL FRUIT TRADE.

For the Calendar Year 1914.

The foreign trade of the United States in fruits and nuts, \$92,840,172 in the calendar year 1914, has doubled in the last decade. Imports were \$59,231,394 and exports \$33,608,778, including in each case trade with Hawaii, Porto Rico, Alaska, and the Philippine Islands.

Bananas, with a total of 16 million dollars; lemons,  $5\frac{1}{4}$  million; olives,  $2\frac{1}{2}$  million; grapes,  $1\frac{1}{2}$  million; pineapples,  $1\frac{1}{2}$  million; currants,  $1\frac{1}{4}$  million; preserved fruits, 1 million; and figs, nearly 1 million dollars, are the leading classes of fruits imported. Coconuts, copra, etc.,  $5\frac{1}{4}$  million dollars; walnuts,  $3\frac{1}{2}$  million; peanuts,

## The Scandinavian American Bank

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The Balanced Stock Feed  
Protein, 26.88; Sugar, 27.95; Moisture, 12.80; Fat, 5.93; Ash, 4.54; Fibre, 21.90.

**\$7 PER TON CHEAPER THAN BRAN**

Recommended by the Agricultural Department. Cotton Seed is a thoroughly proven feed in the South—**IT IS THE COMING FEED HERE**

Write for sample and literature



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SEATTLE

We Make a Specialty of Alfalfa in Carloads

### FRUIT GROWERS

Here is your chance to get some very choice trees at rock bottom prices, for we are compelled to remove all our stock from leased ground.

Do you want a bargain on something choice in trees, then send for our list of varieties and prices today.

ROEBER BROTHERS NURSERY

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### Bantam Seed Corn

Reliable Garden and Flower Seeds in Bulk, Fertilizers, Spray Material and Poultry Supplies.

Orders promptly filled.

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## THE "BOSS" TREE PROTECTOR



Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.

#### PRICES

|                         | Per 1000 |
|-------------------------|----------|
| 10 in. long, 7 in. wide | \$10.00  |
| 12 in. long, 7 in. wide | 11.00    |
| 14 in. long, 7 in. wide | 12.00    |
| 16 in. long, 7 in. wide | 13.50    |
| 18 in. long, 7 in. wide | 15.00    |
| 24 in. long, 7 in. wide | 18.00    |
| 30 in. long, 7 in. wide | 21.00    |

YUCCA MANUFACTURING CO.,  
1380 Willow St., Los Angeles, Cal.



Scene on Shady Grove, the Holstein Dairy Farm of F. M. Svinth, Route 2, Chehalis, Wash., with 20 good producing cows. Lady Pearl, one of the registered cows, 2 years 7 months of age, just finished a 7-day test giving 348.4 lbs. milk and 15 lbs. butter. Mr. Svinth is substituting registered stock for high grades and will soon be a leading breeder. A good registered sire was purchased from Hollywood Farm and appears in this herd. (Courtesy Western Stock Journal.)

## Seed Corn for Ensilage

Corn is now being grown most successfully in the Northwest and proving a most satisfactory ensilage crop, especially with the selection of the proper varieties. Splendid results have been received from

#### MINNESOTA NO. 13 Yellow Dent.

A very heavy yielding, and an especially early corn. Will average 7 ft. in height and being a rapid grower, with heavy foliage, makes excellent silage. Matures in 90 days under right conditions. For short seasons and high elevation, we recommend the old standard

#### EARLY 3-ROW CANADA.

Other dependable varieties which we can supply include Northwestern Dent, Pride of the North, Minnesota King and Wisconsin White Dent. SEND FOR FREE SAMPLE for Catalog No. 50

Portland  
Seed Co.  
Portland, Ore.





about 2 million, and filberts, 1 million dollars' value, are the principal imported.

According to official figures compiled by the Bureau of Foreign and Domestic Commerce, Department of Commerce, imports of lemons have increased about 50 per cent., figs about 60 per cent., coconuts have quintupled, and bananas, walnuts, and almonds have doubled in import value during the period under review. Meanwhile Hawaiian pineapples, mainly canned, of which the imports were not sufficiently large in 1904 to justify a separate enumeration, are now being shipped into the United States at the rate of 6 million dollars' worth per annum, last year's total being 2½ as much as in 1911, while imports from Singapore, which at one time reached several hundred thousand dollars annually, have now nearly ceased. Porto Rican pineapples, mainly fresh, are coming in at the rate of 1½ million dollars' worth a year, as against a little more than half that amount in 1911. While Cuba is the leading source of our fresh pineapples from foreign countries, the amounts received therefrom remain practically stationary and the rapidly growing consumption is being supplied chiefly by canned Hawaiian and fresh Porto Rican pineapples.

#### Exports.

In certain lines the growth of exports of American fruits has been remarkable. Oranges have quintupled in ten years (\$831,260 in 1904; \$4,225,991 in 1914) largely as a result of the expansion of the California and

Florida citrus fruit industry. Prunes have also scored a big gain over the average for earlier years, though when 1914 is compared with 1904 a decrease is apparent, since both those years were abnormal—the figures for 1904 (\$3,634,942) being twice the annual average for the four next succeeding years and those for 1914 (\$2,582,560) but half as much as those for 1913. Apricots (\$1,598,405 in 1914) and preserved fruits (\$5,777,991) have doubled in export sales in the decade.

American fruits are marketed in all parts of the world. Our apples, the exports of which have ranged between 6¼ million and 10 million dollars in the last decade, are sent chiefly to Europe, and our dried apricots to Europe, North America, and Australia. Most of the oranges and lemons which we export are sent to Canada, and smaller amounts are distributed in many countries. Canada, Germany, England, France, the Netherlands, Australia, and New Zealand are the best market for dried peaches, while the United Kingdom, Canada, and other British territories take most of our exported pears. American prunes are shipped principally to Europe and Canada and considerable quantities to the Orient. Canada takes about ¼ of our exported raisins while New Zealand buys between one million and four million pounds annually. The exports of canned fruits are chiefly to England, with smaller but important shipments to France, Germany, Canada, Cuba, and Central America.

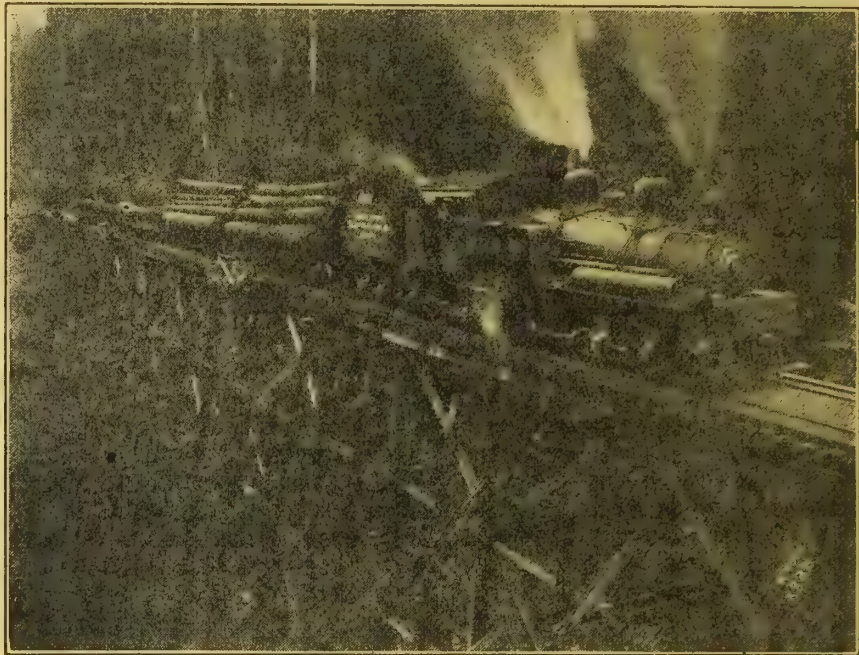


## SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



A trainload of logs for the Brew Mfg. Co., Puyallup, Wash., where fruit boxes by the million and bee hives by the thousands are manufactured for all parts of the West. This firm has extensive timber holdings within 25 miles of its manufacturing plant, and therefore is dependable for quantity as well as quality in all kinds of boxes, fruit packages and hives. Last year rush orders both to distant and nearby points were filled on a few hours' notice. The plant is busy throughout the year.

## AGRICULTURE

### The Basis of Prosperity

#### Corn for the Silo

By C. J. Zintheo, Agricultural Engineer, John Deere Plow Co., Seattle, Washington.

Since the silo is now coming into universal use on the dairy and stock farm it is important to know that any succulent green feed is suitable for silage, including clover, vetch, oats, peas and alfalfa, but none of these produce as many tons per acre as does corn, and corn is recognized for making the best ensilage. Therefore corn should be more universally used for filling the silo. But some of the farmers in Western Washington say corn can not be grown in this country, the nights are too cold, it does not mature, and this is no corn country.

For the benefit of the honest doubters the following story of how a twenty-five ton per-acre corn crop was raised in Western Washington last year might be of interest, and if the directions here given are followed the results ought to be as good.

Pickering Brothers at Issaquah, which is fourteen miles out of Seattle were persuaded last year to plant sixteen acres of corn for the silo.

#### Selecting the Seed.

In the early spring they obtained a sample of corn from a seed firm, which they tested for germination by spreading some kernels between to damp clothes that were left in a warm place for a week. The kernels were then examined and only 50 per cent. of them had germinated. If this seed had been planted only

half a crop would have been obtained. If they could have obtained the seed in the ear instead of shelled it would have been still better. They then sent to another seed house for three different varieties which they tested in a similar way and thus obtained seed corn which germinated ninety-five per cent.

#### Preparing the Soil.

The ground on which the corn was planted was clover sod on which a heavy coat of manure was put with the manure spreader. Before plowing the ground it was gone over with a disc harrow thoroughly, pulverizing the sod and the manure. The ground was plowed seven inches deep and was then disced six times both ways with a disc harrow, after which it was cultivated with a peg tooth smothering harrow.

#### Planting the Corn.

The King Phillip corn which has red kernels was planted May 16th with a John Deere Edge drop corn drill. This drill has plates in the hopper with cells around the outer edge so arranged that one kernel drops into each cell on edge. As the plates revolves one kernel is deposited in each place 4-inches apart and one inch deep in the row. The drill rows was 3 feet 6 inches apart. Five acres were planted.

Another five acres of white cob ensilage was planted in the same way as above, except the kernels were planted 8 inches apart in the row.

Six acres of the Pride of the North corn were planted. This is a yellow

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For pure and reliable seeds send your orders to

**CHAS. HOOD, The Seed and Hardware Man**  
Puyallup, Wash.

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Merlin, Oregon, Nov. 9, 1914.  
I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50.

(Signed) H. E. THOMAS.  
"ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

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**OREGON NURSERY CO.**

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Successful Salesmen wanted.

### OFFICIAL DENIAL

**NO WAR TAX ON HOMESTEAD LAND** in Canada—The report that a war tax is to be placed on Homestead lands in Western Canada having been given considerable circulation in the States, this is to advise all enquirers that no such tax has been placed, and there is no intention to place a war tax of any nature on such lands. (Signed) W. D. SCOTT, Supt. of Immigration, Ottawa, Can. March 15, 1915.

dent corn and the kernels were planted 10 inches apart in the row. The Deere corn drill is so arranged

### CLOVER SEED

We handle a large percent of the crop of the Willamette Valley and are prepared to take care of any sized orders. We save the very finest lots for our own trade and as we buy direct can quote at the very lowest prices. Write and tell us how much you need and we will quote prices.

### VETCH SEED

This valley produces most of the seed used on the Coast, and we are in a position to offer at the lowest prices and best grades.

### FARM SEEDS

We carry a complete stock of Farm, Field, Garden Seeds, Flower Seeds, and Seed Grain of all kinds, and are always glad to quote prices at any time. Our Catalogue is now ready; send for it.

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### SPECIAL SALE OF

Brown Leghorn cocks and cockerels of the very best blood to be obtained in the northwest at \$2 to \$3 each if taken at once.

Are you in need of good stock to head your flock order at once.

FRED A. JOHNSON,  
518 35th St., Tacoma, Wn.



that the distance apart of the kernels can be changed by setting a lever.

#### Cultivating the Corn.

The corn came up above ground six days after planting. Ten days after planting it was gone over with a peg tooth harrow, and the teeth slanted backward. This killed a lot of young weeds that had sprouted, but did not effect the corn which by this time was well rooted. Two weeks after planting the field was cultivated with a Deere Cultivator, a two horse machine with riding attachment and three shovels on each side, equipped with spring trip which insures them against breaking. This cultivation was continued once a week until the corn was two feet tall, making six cultivations in all. Five weeks after planting the corn was hoed with hand hoes, in the drill rows between the stalks, cutting out any weeds which the cultivator was not able to get. At the last cultivation the hiller attachments were put on the cultivator and the corn was hilled as it was laid by less than two months from the time it was planted. It would have been better to use a surface mulcher attachment.

#### Harvesting the Crop.

The cutting of the corn began with a John Deere Corn Binder, September 14th, just four months from the time it was planted. It averaged ten feet in height and produced an average of 22 tons of ensilage per acre. The ears were well formed and were in the milky stage, but were not glazed and none were mature enough for picking. The King Phillip gave the smallest yield, about 20 tons per acre and the ears were small. The white cob ensilage produced heavier stalk and larger leaves, with plumper and more mature ears than King Phillip. It yielded 22 tons of ensilage per acre. The six acres of the Pride of the North corn proved to be the best variety of the three, producing stalks 15 feet tall and yielded

25 tons to the acre. The ears were large and well proportioned but not mature enough for seed.

Considering that during the growing season of four months there were 77 days of continuous drought this growth of ensilage corn is remarkable and shows what can be done in Western Washington in raising feed for the silo.

There is considerable difference of opinion as to the best time to cut the corn for ensilage. Prof. Hacker of the University of Minnesota has carried on feeding experiments with corn ensilage cut at different stages of maturity, and this is his conclusions after four years trial.

He says: "No doubt the ears have more nutriment in them if the corn is cut at the glazing stage than any previous stage, but the trouble is when the corn is cut with the ensilage cutter, the ears are cut into nubbins about one inch long and these pass right through the cow without her deriving the full nutriment out of them. If the nutriment is not in the ear it must be in the stalk, consequently if the corn is cut a little earlier the whole stock will have more nutriment in it and it will be in such a shape that the cow will derive the benefit from it. The corn can, however, be cut too early when too much sap makes sour silage.

The corn was cut with an Ohio Cutter operated with a Caterpillar Tractor, and it made the very best of ensilage and gave Pickering Bros. succulent feed for the whole winter, which has been producing 20 per cent. more milk than by dry feeding.

As soon as the corn was removed the land was plowed and a crop of spring vetch and winter oats was sown, which is now in fine shape, and by the last of May a crop will be ready for the silo, which will serve as summer feed when pasture is short, then a second crop will come on that will be useful either for green feed or hay.

## Seed Corn For Sale

From corn successfully grown and matured on my farm near Enumclaw, Washington, for the past nine years. Heavy yielder of good hard corn.

### Best For The Silo

Ira J. Pearsall Enumclaw Wash.

## Monitor Engine Now \$60!

The greatest, most powerful Farm Engine ever built to sell at such a price. Can be attached to any pump, furnishing abundance of running water for every purpose. Also runs cream separator, feed mill, washing machine, etc. The "Monitor" costs little to operate. Fewer parts than any other engine. Nothing to get out of order. Sold under absolute guarantee. Price . \$60.

Send your name on a postcard for full particulars. Do it NOW.

R. M. Wade & Co.  
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Direct from the section where grown, at lowest price.

Address RHOTEN FARM

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A. I. Root Co.

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SEED  
COMPANY

## BEE HIVES AND SUPPLIES

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We are pioneers in the bee supply business in the Northwest, are thoroughly familiar with local requirements and carry a large and complete stock.

Tested **QUEEN BEES** at short notice  
Italian

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We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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Native Shrubs, Plants and Flowers, collected from the forest.

Send for Circular.

JOEL SHOMAKER  
Nellita, Washington

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Refinery gasoline—every drop. Not a mixture. Keeps your engine "steady." Dealers everywhere.

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Write for prices.

**F. H. Burglehaus**  
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**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.

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FRUIT TREES

SMALL FRUITS  
ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

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Choice Grades of  
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Please let us know your needs early and get a copy of our catalogue and prices.

**BREITHAUP NURSERY CO.**  
C. F. Breithaupt Prop.  
Kennewick, Wash.

## Improving the Farmer's Credit

Methods by Which the Individual Can Make Productive Improvements on Favorable Terms.

Three plans by which farmers in actual practice have succeeded in improving their personal credit and securing loans at less than the prevailing rate of interest are outlined in a publication of the United States Department of Agriculture, Farmers' Bulletin No. 654, "How Farmers May Improve Their Personal Credit."

The first of these plans has worked out in certain localities in North Dakota so well that the farmer has been able to borrow money on his personal note at 8 per cent. at a time when the usual rate in his vicinity varied from 10 to 12 per cent. To secure this reduction in interest, the farmer agreed that the bankers should buy the dairy stock for which he wished the loan and sell it to him at actual cost. The purchase in a number of cases was conducted with the advice of State or Federal dairy specialists. The men who furnished the money were thus in a position to make certain that it was used for productive improvements which would enable the borrower to repay the loan. Under this plan, in fact, the farmer may be said to have borrowed the improvement itself instead

of the money to buy it with.

A plan of the same general character was carried out a year or two ago in southern Idaho, but in this case three or four banks united in the purchase of a carload of dairy stock. In another case in Nevada a local creamery supplied the money and held back a part of the returns from milk and cream delivered by the borrowers. Altogether 491 cows and heifers were distributed among 64 farmers, the aggregate amount of money represented by the loans being \$39,483. This is the simplest of the three methods. It consists essentially in permitting the lender to say how the money that he loans shall be spent. Under such circumstances he naturally feels more secure, and the rate of interest lessens with the risk.

#### Farmers Buying Association.

In regions where for various reasons this plan has not proved possible, another method is to have the farmers collectively assume a certain guarantee for the notes given by individuals. In southern Montana, for example, 19 farmers organized an



association and appointed trustees to represent it in negotiations with a local bank. The trustees were authorized to guarantee a limited amount to the bank on the joint and several liability of the association members. With this additional security the bank agreed to advance \$5,000 to the association at 8 per cent. when the general bank rate was 10 and 12 per cent. Two delegates from the association purchased with the money two carloads of heifers which were distributed among the members, each animal being charged with a proportionate share for all the incidental expenses connected with the transaction. Each purchaser pledged himself to care for and breed the cattle by methods approved by the trustees.

#### Business Interests as Guarantee.

In the third plan the guarantee is furnished not by the farmers themselves, but by an outside interest. As the plan was developed in Wisconsin and Minnesota, this outside interest consisted of local business men who were in their way as much concerned as the farmers with the general improvement of agricultural conditions in their regions. Under this plan the business men subscribed a certain percentage of the funds loaned with the understanding that this was to constitute a guarantee fund to protect the bankers. Otherwise the plan was in its essential principles like that adopted in Montana.

#### Permanent Association Collective Purchasing.

None of these methods require more than temporary organization. A permanent cooperative credit association is, of course, a different matter, which has, however, many advantages. Such associations encourage habits of saving, afford training in business methods and may establish a collective fund for common agricultural purposes as well as providing loans to their members on more reasonable terms than they could obtain individually. The fundamental principle of their management is that no loan must be granted unless the committee in charge believes that the member and the association will both be benefited. The funds for the loans may be secured through payments on shares, through deposits, and by borrowing from outside sources. Associations doing business of this sort, however, are subject to statutory regulations and it is, of course, important that these regulations be understood and observed by the management.

A cooperative credit association must not be considered as in any way a substitute for other banking institutions, but rather as an ally of them. The deposits in such associations are frequently in such small amounts that it is unlikely that they would be placed in a regular bank. On the other hand the total of these small sums is frequently considerable and such part of it as is not loaned to members of the association is usually placed on deposit in the local banks. In addition to the service which the association can render to its individual members both by aiding them to obtain proper loans and by discouraging them from making unwise ones, the association can also be of service to the community in a number of ways, among which collective purchasing is perhaps the most prominent.

#### STUMP PULLING.

It is becoming the practice in most sections to split all the largest stumps by means of dynamite rather than to depend upon the use of extra power blocks and cable, because of the time lost in adjusting blocks and hauling extra cable, because they reduce the speed of pulling, and because that even if the stumps could be pulled their size and shape would make them hard to dispose of. Of course, there will arise cases even when dynamite is used, where the use of the extra power blocks and cable will be advisable.

Most manufacturers put out rope clutches or cluster ropes so that clusters or small trees or stumps may be pulled as one unit. This saves considerable time where the growth is small.

#### FAMILY PARTNERSHIP.

Showing how to interest boys in farming Le Grand Eighme, of Savage, Montana, giving his experience in Reclamation Record, says:

"We have two boys. One of them is up in the twenties; the younger is nearly of age. So you see that we have kept the boys on the farm—have kept them with us wherever we have been. We consult with them; we do not order them. They help plan the farm work and the farm buildings, and take an interest in everything pertaining to the farm.

"In 1914 we cropped 250 acres and irrigated part of it; built half a mile or head ditch and many field ditches; built half a mile of fence; built a new house 20 by 40 feet; built a new barn 36 by 60 feet, 39 feet high, with self-supporting double hip roof, taking 40,000 shingles to cover. We hired no carpenters. The boys and I did the work, with the exception of a hired man on the farm for about three months. We have dug three wells, and have a bunch of beef cattle that require a great deal of herding. We also have a bunch of registered Chester white hogs that require a lot of time. We broke in three teams of young horses. Between our work and play we are busy the year round.

"Do not forget to feed your boys well; they are growing and need plenty of good wholesome food.

"Nothing pleases my boys more than to get a joke on pa. I am 60 years old and have not become so dignified but that I can appreciate their jokes and let them have their laugh.

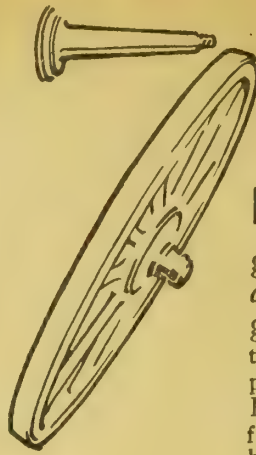
"Above all things, do not find fault with the boys. If they make a mistake, kindly show them, remembering that once you were young.

"In short, make comrades of your boys; take them into business; teach them to do business, and trust them to do business. If they get stung a little it is no more than you have had yourself. It will teach them to do business with their eyes open while they are young."

#### DOES MY FARM NEED FERTILIZER. OR SHALL FERTILIZERS BE USED?

The condition and fertility of the soil and the character of the farming will determine whether or not fertilizers should be used. Fertilizers are generally required if intensive farming is practiced and large crops are grown on small areas.

"The use of fertilizers," says J. E.



## MICA AXLE GREASE

gives better lubrication. Spindles can't get dry or hot—grease can't gum or cake. The grease itself is the best that skill, equipment and money can produce, and then—there's the ground mica. Keeps the spindles friction free. No hot boxes. Dealers everywhere.

**Standard Oil Company**  
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CYPHERS INCUBATOR  
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VETCH, TIMOTHY, RYE, ETC.  
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Don't forget we handle CONKEY POULTRY REMEDIES, Conkey's Lice Powder and all of their Stock Foods.

BARTLETT'S Calf Meal, the perfect milk substitute.

CYPHER'S Incubators and Brooders.

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**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nelis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

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Write for prices on quantities.

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and Perfection Currant

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Correspondence solicited.

**Portland Wholesale Nursery Co.**

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Halligan, "is more profitable if the soil is kept in good physical condition, than if the soils are not properly cared for. For crop production on poor soils the use of fertilizers is necessary, for without them a profitable crop can not be produced. On farms where a systematic rotation is practiced, and farm manures are employed, the use of fertilizer to supplement the deficiencies of the soil is usually very profitable; while on farms where one-crop farming is continued the response to fertilizers is not satisfactory. The farmer can keep his soil in good condition and profit by the use of fertilizers."

"Fertilizers should not always be blamed for unprofitable returns as the trouble generally rests with the farmer who is careless in his methods," says R. P. Cope, Department of Chemistry, State College. "Farmers should spend a great deal of time tilling the soil and not expect the fertilizer to do all the work."

An acid or alkaline condition of the soil has sometimes resulted in an unprofitable use of fertilizers. These conditions may be natural or may have been brought about by the long continued use of some particular fertilizer. The conditions being corrected the application of fertilizers again become profitable.

Many of the best fertilizers do not liberate all their plant food the first year, but may give beneficial effects for three or more years.

Another factor is the moisture condition of the soil during the time plants should make the most rapid growth for moisture and fertility depends one on the other in a large measure to afford a proper amount of nourishment. It is for this reason that soils in the coast section planted to clover, peas or vetches becomes richer in fertility with each years crop. These crops grow when there is ample moisture and any lime, land plaster, phosphate and potash applied in connection with the legumes enriches and multiplies their activities enriching the soil still more.

### PREPARING FOR LARGE YIELDS.

Both corn and root crops of all kinds require a well conditioned seed bed. The ground should be enriched, but, above all well pulverized for a healthy root system can only be established in a field that has been finely pulverized to a considerable depth depending somewhat on the soil conditions and the nature of the crops.

Several tools are used to good advantage in the Pacific Northwest, the plow, spring tooth harrow, the disk and more recently what is known as the Culti-packer, an implement which serves to pulverize and takes the place of the old-fashioned roller in one operation.

There are several instances in the coast section where the oat yields have been doubled by a proper use of the disk which can be used repeatedly after plowing. The Culti-packer serves well following the disk to prepare a piece of ground for corn or for any of the root crops.

**Pulverizing Signifies Moisture Holding.**

That most important part in soil moisture conservation, the most important factor in dry farming, and the one which has been most greatly neg-

lected by our western farmers is getting the rain water into the ground and safely stored or conserved in the subsoil, where it may be drawn upon by the growing crop. The firming and pulverizing of the soil to restore capillarity and the cultivation to maintain the soil mulch are each without avail unless there has been stored in the deeper soil a sufficient amount of moisture to support the growing crop in time of a drouth.

If newly plowed land is left for two or three hours on a day when there is sun and wind, the ground will lose the equivalent of two or three inches of rainfall.

On this point Prof. Bedford of Manitoba Agricultural College says in a bulletin:

"If the newly plowed furrows are allowed to remain as left by the plow for any great length of time, particularly during hot windy summers, a large amount of moisture will evaporate. For this reason the plow should be followed closely by the soil packer. In fact, every day's plowing should be packed before night. This will press the soil closely together and check evaporation at once. Soil will always pack together more firmly when freshly plowed. The following striking results were obtained from the Brandon Experimental Farm last summer. The average yield from four unpacked plots was 45 bushels of wheat per acre. The average of four adjoining packed plots was 52 bushels and 55 pounds per acre, or seven and a half bushels more than unpacked."

Fred McCullough, a practical Minnesota farmer says in exchange, "Soil preparation for corn must, of course, be varied with the season. This should be remembered; we want as deep and mellow yet firm a seedbed as we can secure, free as possible from clods, with the surface soil finely pulverized so that it is as near like garden condition as we can get it."

### WHEAT VARIETIES AND CLASSIFICATION.

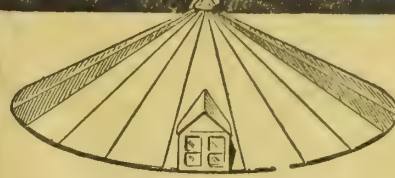
According to Bulletin No. 121 of the Experiment Station, Pullman, Wash., the Blue Stem, Marquis, Hybrid 128, Red Russian and Little Club are leading varieties of wheat grown in Washington.

Grain dealers base their estimates of value on such physical characteristics as color, size and shape of kernel, and weight per bushel. They classify wheat and determine grades largely by observation of these characteristics. Often a difference of five to ten cents per bushel is paid for wheat of different classes, or even different lots of the same class. The difference is at least partly due to difference in quality. The rules and regulations governing the inspection and grading of grain established by the Public Service Commission of Washington prescribe that, "Choice milling wheat must be sound, dry, plump, of good color, free from smut, clean and not mixed." A general classification placing wheats into several classes, and as many as four grades has been based upon the appearance of physical characteristics. Sufficient accuracy, however, can not be obtained by the trained individual by inspection to make it possible to rate different samples of wheat according to their milling value.

The mixing of varieties on the farm or during marketing, which is another result of numerous varieties,

# "SIMPLEX"

## A PRACTICAL SILO FOR EVERY DAIRYMAN



Above all, here is a PRACTICAL Silo! It is simple in its construction, yet contains the most vitally important features known since the beginning of silos. Back of the Simplex and the claims we make for it, stands the reputation and guarantee of the firm of Monroe & Crisell.

### THE NEW CRISELL TANGENT TOP BRACING

The Crisell patent tangent Top Construction is the greatest improvement ever made in silos. It will absolutely hold the top of the silo in a true circle. It is entirely automatic and never has to be touched after the silo is erected. No other silo in the world contains such a feature.

Dozens of practical silo men who have seen the invention, say it overcomes a problem which silo manufacturers have been working years to solve.

Most silos go to pieces because the top gets out of its true circle.

### BACKED BY A GUARANTEE BOND

Besides the reputation of Monroe & Crisell as your guarantee, every purchaser of a Simplex Silo will receive a signed guarantee bond, guaranteeing that the patent Tangent Top Construction will hold the silo in a true circle, and it will never go to pieces if properly taken care of. Other silos can make their claims and representations, but here is AN ABSOLUTE WRITTEN GUARANTEE.

### WAITE FOR DETAILS

Send your name on a postal, or fill out the coupon below for full particulars on the Simplex Silo, with its wonderful new feature! Every man interested in a silo this year should know of this great improvement.

The illustration shows our new feature, as well as a silo with the ordinary top.



## EVERY "SIMPLEX" SILO IS BACKED BY A MONROE & CRISELL GUARANTEE BOND

**MONROE & CRISELL**  
"EVERYTHING FOR THE MODERN DAIRYMAN"

**134 FRONT STREET  
PORTLAND, OREGON**

MAIL THIS COUPON TODAY!

MONROE & CRISELL,  
134 Front St., Portland, Ore.

Please send me FREE Folder fully describing your new Simplex Silo, with the patent Tangent Top Construction.

Name .....

Address .....

# LIME

**FRESH  
AIRSLACKED  
HYDRATED**

In Any Quantity. Write for Prices

**Tacoma Trading Co.**

DEALERS IN BUILDING MATERIALS

1715 Dock Street

TACOMA, WASH.

## Christopher Nurseries

Nurserymen for four generations; 25 years at present location. From this experience we are producing stock which affords planters the very highest measure of satisfaction; carefully grown; free from disease.

Catalog on request. (Could use a few good salesmen.)

**JOHN A. STEWART & SON, Props.,**  
Christopher, King Co., Wash.



# SILOS FILLED WITH SATISFACTION

THE GOVERNOR OF OREGON  
HAS ENDORSED THE BLIZZARD

MAY 30, 1914.

TO WHOM IT MAY BE OF INTEREST:

THE WRITER HAS HAD CONSIDERABLE EXPERIENCE WITH THE BLIZZARD FEED CUTTER AND KNOWS IT TO BE DURABLE, SIMPLE AND COMPACT IN MECHANICAL CONSTRUCTION. EASY TO OPERATE AND ALWAYS RELIABLE.

(Signed) JAMES WITHERCOMBE.

Cleora, Oregon, May 2, 1913.

Mitchell, Lewis & Staver Co.

Gentlemen: We have used your Blizzard ensilage cutter the past season and find it a very satisfactory machine in every way. We put up over 600 tons of corn and had no trouble cutting from 50 to 55 tons per day and elevating it to a height of 32 feet, using an L-15 machine. We consider them the best machine made for the purpose. We also used it to cut alfalfa and clover hay and to shred and cattle at our yards this winter, and it handled the work in good shape.

Yours truly,  
THE SUN VALLEY RANCH,  
By E. G. McGraw

"BLIZZARD IS BEST EVER"

Sweet Home, Oregon, May 10, 1913.

Mitchell, Lewis & Staver Co.,  
Portland, Oregon.

Gentlemen: Owing to being very busy, have just neglected writing letter requested, but in reply to same will say that the Blizzard Cutter is the "best ever" and is so far ahead of the other cutters that if we were again in the market for a cutter we would not consider the other cutters for a minute. The Blizzard cutter is the simplest constructed strongest built, and does the most satisfactory work of any machine we ever saw. We blazed two silos last fall, with one machine, and it ran through the job without the least bit of trouble, taking the crew as fast as we could to handle it, and doing an excellent job of cutting. We can say in conclusion that anyone wanting a cutter will make a big mistake if they buy any but a "Blizzard". We could write several pages on the good qualities of the machine but think it not necessary, for anyone seeing a "Blizzard" run can see that it is a perfect machine.

(Signed) JOHN T. RUSSELL.

Milwaukee, Ore., June 1, 1914.

Chelan Produce Co., Chelan, Wash.  
Gentlemen: The No. 9 Blizzard Ensilage Cutter bought September, 1911, is giving the very best of satisfaction in every respect. Have cut about five hundred tons with no expense for repairs whatever, and I think, barring accidents, the machine will almost last a lifetime.

Am using an H. I. P. Stover engine and can cut 4 to 6 tons per hour.  
If the knives are kept sharp and the belt dry, to keep it from slipping, it is surprising to see the work that can be done with the machine.

I can give you the names of several neighbors who last year bought Blizzards.  
Respectfully yours,  
OTTO NABF.

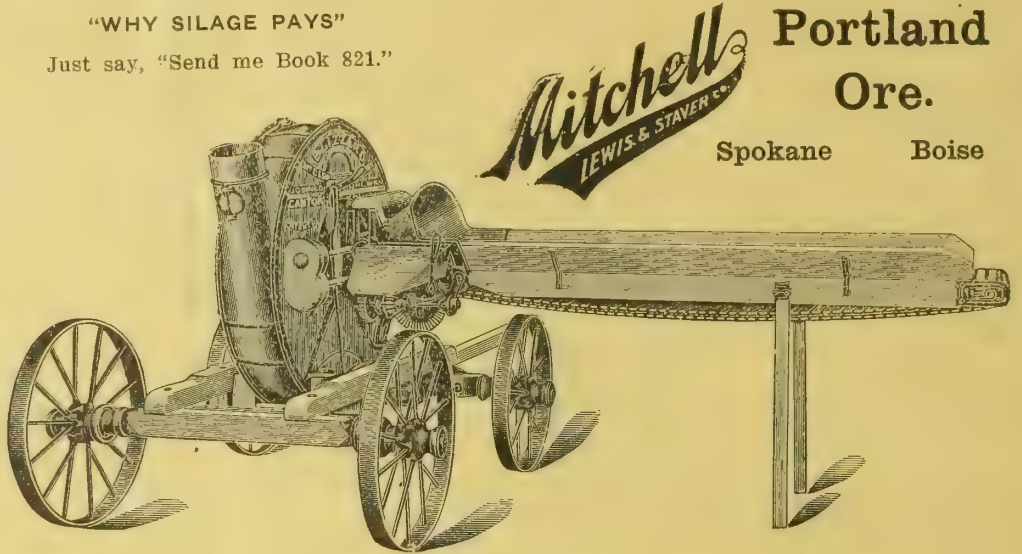
To fill a silo with satisfaction means to fill it rapidly with well-cut silage. To fill it without frequent breakdowns of the ensilage cutter. Satisfaction in silo fillings means an ensilage cutter that will not choke up, that will take what comes to it and put it up into the silo.

## THE BLIZZARD ENSILAGE

Cutter has thousands of friends for the very reason that it does all these things satisfactorily. It was the first machine to combine knives and fly wheel. It was the first machine to use wind blast in elevation of silage. It is a self-contained cutter that will elevate into the tallest silo; there is no other so good. Drop us a postal today for

"WHY SILAGE PAYS"

Just say, "Send me Book 821."



Portland  
Ore.

Spokane Boise

has a tendency to reduce wheat prices.

Owing to different soil and climatic conditions in various parts of the state several varieties are necessary to suit all requirements. The number of varieties grown should be reduced to as few as possible. In making selection of the proper varieties, quality as well as yield should be considered. Hasty conclusions should not be drawn from the yields obtained in abnormal years. The average production for a period of several years gives more trustworthy information.

## LARGER FARM CROPS.

During past years the live stock and poultry farmers in the Coast Section have depended in a large measure on buying the greater proportion of their grain feed. This year they are planting every available patch of ground with some kind of grain, as peas, oats, wheat or barley.

In Lewis county, F. A. Degeler, who had charge of the exhibits at the local fair showed 23 varieties of wheat and speltz, 27 kinds of oats and 13 kinds of barley. The yield was high an Marquis wheat, Blue Stem and Alaska wheat, in some cases over 75 bushels per acre. The Shadeland Wonder was among the best yielders in oats, but several other varieties were top producers, weighing 45 lbs. to the bushel. Seed peas are in great demand and thousands of bushels will be grown to be used locally in stock and poultry feeds. The pea is the natural grain for the coast country. It grows under the existing cool, humid atmosphere luxuriantly and at the same time enriches the soil. Oats and peas, barley and peas or speltz and peas planted in April will serve to make the production of eggs and butter cost the farmer less in the fall when prices are highest.

## CROP PLANTING HINTS.

Some timely hints for the coast section on field crops are suggested by H. D. Scudder, of the Corvallis Station.

### Kale.

The kale seed should be sown some time during March or April so that the plants will have a growth of 8 to 10 inches by the time they are to be transplanted in June. Three-fourths of a pound of seed is ample to furnish plants for an acre of ground. An early piece of soil heavily manured with thoroughly rotted manure should be used for the kale seeding.

### Rape.

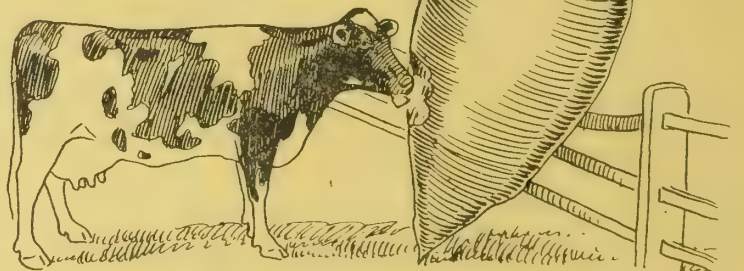
The Dwarf Essex rape seeded broadcast at the rate of 3 or 4 lbs. per acre or in rows 30 to 36 inches apart makes one of the very best of succulent pastures for sheep, hogs, and chickens. It is ready for pasturing in from six to eight weeks after sowing. Seedings of rape every two or three weeks may be made until June, so that a succession of rape pasture may be maintained until late in the summer. Rape seed is nearly all imported into this country, and on account of the war the price is more than double the ordinary price. Farmers will find it profitable to raise a few acres for this purpose. After the harvesting of seed, pains should be taken to disc the land thoroughly so as to sprout all of the seed that is scattered on the ground, thus avoiding any plowing of the seed under before it is sprouted, as it endures a long time in the soil and would appear in subsequent crops where it was not wanted.

### Seed Corn.

The forehanded farmer is now looking about for his seed corn. The Oregon farmer should use Oregon-grown seed. Minnesota No. 13 is the best silage variety the Experiment Station has yet been able to

THE TWO GREAT FODDER  
CROPS FOR DAIRY CATTLE  
AND OTHER LIVE STOCK  
ARE

**Sludstrup Mangel  
Beet  
and Corn Ensilage**



The Sludstrup contains 27% more dry matter and is more nutritious than any other mangel or beet. We offer seed—1 lb. for 50c; 5 lbs. for \$2; 10 lbs. for \$3.50, post paid.

**CORN FOR ENSILAGE**, the kind which affords satisfaction is **PRIDE OF THE NORTH**.

Your seed did fine, in fact I had the largest tonnage per acre of any farm in this valley and I am safe to say King County. I filled a silo 14x30 on a piece not over two acres.

J. J. BARRY, Toit, Wash.

Write us today, while the seed is available.

**AABLING-EBRIGHT SEED CO.**

89 Pike Street, Seattle, Wash.

find after seven years' trials of a great many different varieties. There may be better varieties than this, but there is no question that this variety is good. Mr. C. C. Charley, of Brownsboro, whose corn took the highest prize at the State Fair last year, reports an average yield of 111 bushels per acre. His corn was the College No. 13. A number of farmers in Western Oregon have reported yields of over 100 bushels per acre from seed of this variety.

## TRANSIT THROUGH PANAMA CANAL.

Leon M. Estabrook, Chief Bureau of Crops.

The average time of transit for steamships from United States Pacific Coast ports to England is about one-half what it was before the opening of the Panama Canal. Grain ships arriving at British ports from August 1914, to February 13, 1915, from San Francisco, Portland, Ore.,



and Puget Sound averaged 48 days for a voyage. Of 27 voyages, the shortest was 34 days and the longest 88. Only 3, however, exceeded 54 days.

Most of the grain exported from the Pacific coast is carried in steamships this season (1914-15). Last season (1913-14) most of the export grain from the Pacific coast was carried in sail vessels, whose voyages to British ports averaged 136 days. Of 22 cargoes, the shortest time of transit was 102 days and the longest 171 days. In 1913-14 the average time of transit for steamships carrying grain over these routes was 94 days, or nearly double the average for the first part of 1914-15.

### ROOT-KNOT A DESTRUCTIVE DISEASE.

Nearly 500 kinds of plants are already known to be susceptible to root-knot, and it is probable that future observations will greatly increase this number. Known under the names of root-knot, root-gall, big-gall, big-root, etc., this disease does immense damage out-of-doors in all except the most northern States, and everywhere causes damage in greenhouses. It is due to a minute parasite of the nematode family sometimes known as an ell-worm, which causes the roots of susceptible plants to become so enlarged that the transfer of water to the stem and leaves is seriously interfered with. On the other hand the entrance of harmful fungi or bacteria is made easier. In the case of cotton, for example, the root-knot parasite may be present in such small numbers as not to cause much harm itself but may nevertheless prepare the way for wilt or black-root, a fungous disease.

The seriousness of root-knot is pointed out in a new publication of the United States Department of Agriculture—Farmers' Bulletin 648, "The Control of Root-Knot"—which discusses the most feasible methods of eradicating the disease. Under ordinary circumstances, says the bulletin, the most satisfactory method is to raise in the infested fields for a period of two or three years, crops that are immune to the parasite, carefully killing at the same time all weeds and susceptible plants. Of the highly resistant crops the most important are: Barley, Beggarweed, Brabham Cowpea, Broom-corn, Millet, Corn, Crab-grass, Iron Cowpea, Peanut, Pearl Millet, Redtop, Rye Sorghum, Timothy, Velvet Bean, Wheat, and Winter Oats.

In general it will be found desirable to include several of these crops in a rotation in which a summer legume alternates with a winter grain.

### MANURE SPREADER, DUAL PURPOSE.

The Agricultural Experiment Station, Pullman, Washington.

Investigations have proven that the depreciation for the manure spreader is approximately 11.67 per cent. annually. Owing to the fact that this machine is required to carry a by-product which contains more or less moisture, a part of the depreciations is undoubtedly due to the decay of the wood in the framework. If this and similar pieces could be utilized to a greater extent they should last almost as long, and in doing the ad-

ditional work the yearly charge in connection with operation could be met more fully or completely. Ordinarily the manure spreader is in use at seasons of the year when the field work is not demanding attention. While the harvest is in progress it will be found idle; hence, it is available for other work.

In districts where field roots as mangolds, sugar beets, or turnips are grown, the manure spreader may serve as a wagon in transferring the crop from the field to the root cellar or pit. A simple adjustment will enable the operator to save considerable time, as well as the task of unloading with the aid of a shovel. The cylinder or spreader is first removed from the end of the box and a suitable end board is set in place, the latter being held by an iron bar or rod. When the load is taken to the cellar, the end board can be lifted out readily and the roots may be rolled into the trap door by putting on the crank which connects with the apron shaft and turning by hand until the entire lot has been discharged. It requires only a few moments to deliver the load.

### CORN GROWING.

Plow deeply, condition the ground well, making it as fertile and smooth as possible which is best done by the repeated use of the disc and pulverizer, before planting corn. The repeated use of the disc previous to planting will save much after work and increase moisture holding capacity of the ground, serving as a storage reservoir of nourishment when warm dry weather affords opportunity for rapid growth.

Corn should not be planted until the ground warms up thoroughly and when danger of frost is past. If only a small area is to be planted it may be planted by hand or with a hand planter, if a large corn planter is not available.

Corn should be planted in rows  $3\frac{1}{2}$  feet apart and in hills  $3\frac{1}{2}$  feet apart in the rows. Three to five kernels should be planted in each hill. For silage most farmers plant drills about 18 inches apart in the rows. In dry sections the hills may be planted further apart and thinned to two plants for each hill.

The corn should be kept well cultivated and at all times free from weeds. Cultivation, says E. G. Schaffer, State College, may commence as soon as the corn is through the ground and continue until it commences to tassel. Level shallow cultivation is considered best and should be frequent enough to keep the land from becoming hard on the surface. Early cultivation is often accomplished to an advantage with the harrow.

### AERIAL NAVIGATION.

Bird More Economical of Energy Than Best Aeroplane.

There is an aerial machine far more economical of energy than the best aeroplane invented, and that is the bird known as the golden plover. This bird, according to the United States Department of Agriculture's new bulletin, No. 185, on "Bird Migration," can fly 2,400 miles without a stop, making the trip in not quite 48 hours, and using only two ounces of fuel in the shape of body fat. A thousand-pound aeroplane, if as econ-

## THE 'K' HAND POWER STUMP PULLER WILL PULL ANY STUMP 1 INCH

STEEL  
CABLE  
WILL  
HOLD



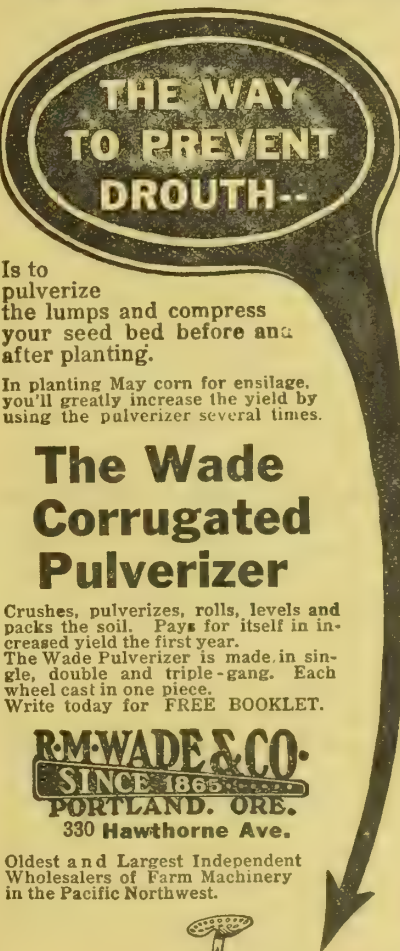
The "K" pulls them out like this! Stop the waste by investing in a "K" Hand Power Stump Puller and your cleared fields will put money in the bank for you.

The "K" is the stump puller that does not need a team of horses and a crew of men to operate it. The power is in the machine—with it you can outpull 16 horses. It is built to clear land cheaply—to make stump pulling a one-man, spare time job. Weighs but 171 lbs.; one man pulls 96,000 lbs. The "K" has made good on immense Pacific Coast stumps—the toughest anywhere.

Made of Krupp Steel, with case hardened wearing parts. Simple, Compact, Powerful. Works on any kind of land, at any angle. Used by U. S. Government in Alaska, by Many States and Counties, and by hundreds of land owners in all parts of the country. Comes complete, ready for work, with 200 feet weatherproof English cable. No extras to buy.

My new free book on land clearing shows why the "K" is the cheapest way. Write for it today, and for the limited time special money-saving offer.

WALTER J. FITZPATRICK  
Box J—1926 Second Ave., Seattle, Wash.



Is to pulverize the lumps and compress your seed bed before and after planting.

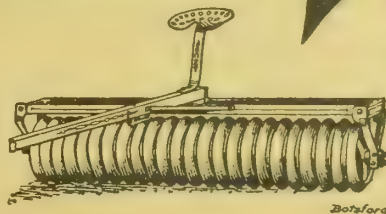
In planting May corn for ensilage, you'll greatly increase the yield by using the pulverizer several times.

### The Wade Corrugated Pulverizer

Crushes, pulverizes, rolls, levels and packs the soil. Pays for itself in increased yield the first year. The Wade Pulverizer is made in single, double and triple-gang. Each wheel cast in one piece. Write today for FREE BOOKLET.

R. M. WADE & CO.  
SINCE 1865  
PORTLAND, ORE.  
330 Hawthorne Ave.

Oldest and Largest Independent Wholesalers of Farm Machinery in the Pacific Northwest.



## Touring— Out of Oil

—a change from the oil you have been using means bother in adjusting the feed. Otherwise too much or too little is fed into the cylinders. No trouble if you use

## ZEROLENE the Standard Oil for Motor Cars

It is obtainable everywhere, from Seattle to San Diego, from Spokane to Phoenix—at city garage or roadside hamlet.

And it is always uniform—the same body—the same perfect lubricating quality.

Dealers everywhere, or at all agencies and Service Stations of the



Standard  
Oil  
Company  
(California)  
Tacoma

## DAHLIAS THE BEST IN THE WEST

Send for our Complete Catalog today. It gives very accurate information, free of cost.

OLAF J. WINGREN,

LaConner, Wash.



omical of fuel, would consume in a 20-mile flight not the gallon of gasoline required by the best machines, but only a single pint. The fact that the screw propeller of the aeroplane has no lost motion, while the to-and-fro motion of the bird's wings appears to be an uneconomical way of applying power makes the fact regarding fuel seem even more strange.

#### Where do Birds Go When They Migrate?

Everybody knows that birds when they migrate in the fall generally "go South," but knowledge is seldom more specific. The Department's new bulletin brings out the fact that while some birds go to Florida or the West Indies or Mexico, others, such as the bobolink and rice bird go as far South as Paraguay and the southern part of Brazil.

#### ALFALFA MOLASSES MEAL.

##### Compared With Grain Ration.

Professor R. R. Graves, of the department of Dairy Husbandry, Oregon Agricultural College, reports the results of an interesting experiment made to determine the relative economy and efficiency in milk production by replacing the grain ration with alfalfa molasses meal. Two lots of cows were selected, each lot containing four animals, all being as nearly equal as possible in age and period of lactation. The cows in both groups were fed a balanced ration consisting of practically all of the alfalfa hay they would eat, thirty lbs. of corn silage, and one lb. of grain equivalent to each four lbs. of milk produced daily. One lot of cows were used as a check. For the other lot during the second ten-day period, one third of the digestible nutrients of the grain ration were replaced by an amount of alfalfa molasses meal sufficient to give the same amount pound for pound of digestible nutrients. The third ten days the substitution was one-half. The fourth period the grain was entirely dispensed with. The conclusions reached as a result of the experiment were briefly as follows:

First, that alfalfa molasses meal can probably be used economically to substitute one-half the digestible nutrients in the grain mixture when its cost is not more than 80 per cent. that of the grain.

Second, it may be used as a substitute to the extent of replacing one-half the grain ration in a proportion of five parts meal to four parts grain or nutritive value pound for pound without affecting the milk flow.

Third, when more than one-half is replaced the milk flow is checked.

Fourth, when more than one-half is replaced under the combination used in this experiment some cows fail to relish the ration."

#### PEAS AND OATS

Farmers who failed to sow a sufficient amount of vetch and oats last fall so they are short of green feed and forage pasture, cow hay, or summer silage, will find field peas and oats one of the best crops for spring sowing for these purposes. Peas are an excellent substitute for vetch and oats but should be sown not later than April. They should be drilled in at the rate of two to two and one-half bushels per acre, three or four inches deep, followed about ten days

later with one and one-half bushels of oats drilled over the peas crosswise to a depth of about one and one-half inches.

For later sowing, barley may be substituted for the oats for a forage crop.

#### CLOVER AND BARLEY.

Clover seeded with barley may be seeded during April. Barley is really preferable to oats as a nurse crop for clover as it does not shade the young plant so much. Not over one and one-half bushels of either oats or barley per acre should be used as a nurse crop. If the clover land has been plowed early and the seed bed kept thoroughly cultivated, clover may be seeded with rape successfully as late as May.

#### FARMERS ASK AID IN MARKETING.

The National Farmers' Union, which is making a special study of marketing of products, has issued some interesting articles dealing with this phase of farm economics.

"The economic distribution of farm products is today the world's greatest problem," states one of these articles, "and the war, while it has brought its hardships, has clearly emphasized the importance of distribution as a factor in American agriculture, and promises to give the farmers the co-operation of the government and the business men in the solution of their marketing problems.

"The result will, in a measure, compensate us for our war losses, for the business interests and government have been in the main assisting almost exclusively on the production side of agriculture. While the Department of Agriculture has been dumping tons of literature on the farmer telling him how to produce, the farmer has been dumping tons of products in the nations' garbage can for want of a market.

"The people of this nation should address themselves to the subject of improved facilities for distribution, and when they have solved this important problem for the farmers, they will have rendered a service which will redound to the benefit of every line of industry."

#### TREATING SEED POTATOES

M. B. K. of Kent, Wash., desires to know how to treat cut seed potatoes to prevent them from rotting when planted early.

Reply: Cut the potatoes a week or ten days before planting time and spread them out to dry. After cutting them it is best to soak the seed in a corrosive sublimate solution composed of 4 ounces to 30 gallons water for 1½ hours. The solution should be placed in a wooden barrel or tank, as it corrodes metal and a new batch should be made after 4 lots of potatoes have been treated. It is poison to eat but not to the touch so be careful not to eat nor feed treated potatoes. After the seed has been spread out to dry it can be put into a bin or box, but all the cut surfaces should be exposed to the air and it is not so apt to rot when placed in a cold damp soil. For early planting the prices should not be cut so small as may be done when the ground becomes warmer.

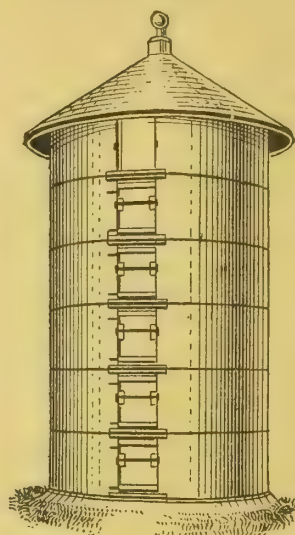
Another precaution, when planting early, about 5 inches deep, cover only slightly at first until sprouts are started.

## The Weyerhaeuser Silo is Built to Last a Life Time

Permanency of construction is one of the big features of WEYERHAEUSER SILOS. They were built to last a life-time and more, too.

The silo is an established factor in the economical life of the modern farmer. It is no experiment—farmers now realize the silo to be an ultra-profitable investment—provided that the RIGHT KIND of a silo is bought. Successful usage has proven that the WEYERHAEUSER is the right kind of a silo.

#### Write for Silo Book



**Weyerhaeuser Lumber Co. Everett, Wash.**



#### Points in Favor of the Weyerhaeuser Silo:

1. Its air-tight construction means perfect ensilage.
2. Scientifically designed and guaranteed anchorage system.
3. Perfectly balanced, easy-to-swing, air-tight doors.
4. Safety tread ladders.
5. Specially rolled steel hoops, thoroughly tested.
6. Specially designed, SELF-ADJUSTING roof.
7. Staves made from air-dried Douglas fir in the largest silo factory in the Northwest.
8. The guarantee of the largest lumber company in Washington.

Agents for the

#### Weyerhaeuser Silo:

MR. ROBT. BURT, General Agent, 1009 Western Ave., Seattle.  
CLEAR LAKE LUMBER CO., Agents Skagit Co., Mt. Vernon and Sedro-Woolley, Wash.  
ROYAL DAIRY CO., Agents Whatcom Co., Bellingham, Wash.  
GLENDALE CREAMERY CO., Agents Jefferson and Clallam Counties, Port Townsend, Wash.  
ST. PAUL & TACOMA LUMBER CO., North Yakima, Wash., Agents Benton and Yakima Counties.  
JOHN H. GIBLIN, Chehalis, Wash., Agent for Lewis County.

## A "Sure Thing" Investment for the Farm

There is no element of chance about using good fertilizer. The question for you to decide today is "What Fertilizer to Use."

For many years, orchardists and growers of various kinds of crops have found the special mixtures of

## Diamond Fertilizer

to be reliable and satisfactory because they are honestly made, and sold on the basis of a correct analysis of available elements.



#### McWhorter Fertilizer Drill

For the simple, superior distribution of Commercial Fertilizers. Well made, easily operated.

Ask for our general catalog No. 55 for complete description of this economical, low-priced drill, which you will find an immense saving to you. It not only prevents waste of fertilizer, but insures even distribution at the greatest speed.

#### FREE FERTILIZER BOOKLET

will give you a better idea of the kinds of fertilizer we make and the various blends we supply. Ask for Booklet 55.

#### Portland Seed Company Portland, Oregon



## \$82 A WEEK EARNING CAPACITY

### "KING OF THE WOODS" DRAG SAW

With or Without Buzz Saw Attachment Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

#### Reiersen Machinery Co.

SOLE MANUFACTURERS PORTLAND, OREGON.





# IRRIGATION

Adequate, available moisture  
at all seasons.

## CURRENT COMMENTS.

Reclamation, by C. J. Blanchard,  
Statistician.

Revival of interest in the West as a location for a home is evidenced by a very heavy increase in our daily mail. The first week in February brought us nearly 1,000 inquiries, largely from the Middle West, and the majority of the letters are from people of farm training and experience.

To the agricultural development of the arid West the Middle West has contributed largely of its best blood, bone, and sinew. In the great Mississippi Valley there are thousands of practical, farm-trained people who are seeking a foothold on the land. Let us seek to divert to our land of fortune and opportunity these citizens of our own country. When they are provided for in homes of their own, then we may open wide the gateway to the teeming masses of Europe. The great heart of America, thrilling to the appeal of war-stricken Europe, has responded nobly. That is the American spirit. Let us not forget, however, that here in our own country, at peace with the world, we have hundred of thousands of our own kin who are asking, not for charity, but for opportunity to establish a home. While we are pouring out millions for sufferers abroad, we are doing but little for the thousands of deserving men in this country who are striving vainly to get a foothold on the land. The tenants on farms; the farmers' boys in town and in the country, and the farm laborers are deserving of consideration and a chance.

The chances are in the west, where millions of untilled acres await industry and pluck to respond abundantly. Already our appeal for suggestions has met with response. One valley offers to take 100 farm families and provide them with work and the opportunity to secure homes on generous terms. Individuals have written, offering homes and employment. We need agencies all over the country to work out this problem of bringing the landless man to the manless land and to make wise selection of place and man. I know of only one agency which is working on this problem in a thoroughly practical way, and that is a Jewish association in New York City. Many others are engaged along similar lines, but their results are not so noticeable.

## IRRIGATING PASTURE LAND.

The Idaho Station secured excellent results by planting grasses in a comparatively dry seed bed and irrigating to bring them up. Experiments have shown conclusively that if any crop is to be irrigated up the water should be applied by the corrugation or furrow method. This applies especially to pasture grasses. If flooded, moist soils wash to some extent and also form a hard crust that the young grass plant cannot penetrate. Even if the grasses are planted early enough in the spring to be sprouted by the winter moisture the first season's irrigation should be applied in corrugations, because a baked surface will interfere seriously with the growth of the young plants.

During its first few weeks the pas-

ture should be irrigated frequently. The time between applications will depend upon the type of soil but the seed bed should be kept moist until the grasses are well started. Thereafter the soil should be supplied with sufficient moisture for good growing condition.

After the first season it is not necessary to make fresh corrugations. The old one will not be entirely filled and will help to lead the water. Since the sod will prevent washing or baking the land can be flooded with good results.

For the old pasture the border method of flooding is very satisfactory. When this plan is to be followed the borders or dikes should be made before the pasture is seeded so that the grass can be sown right over them.

Since grasses are comparatively shallow rooted, light, frequent irrigations will give better and more economic results than large amount applied at greater intervals. Pasture grasses require more frequent irrigation and a greater total amount than most other farm crops. On the Station farm grasses require water at least once every ten days and the total amount during the season averages about two and one-half acre-feet per acre.

## PROPOSED WATER CODE.

By Professor O. L. Waller, State  
College of Washington.

1. Those now using water will eventually have their rights definitely determined and thereafter secured against encroachments and lawsuits.

2. Titles to water will be placed on record in the auditor's office and will become as definite and as easily ascertained as titles to land.

3. Water right litigation will rapidly decrease.

4. Money lenders will not discriminate against irrigated lands on account of clouded water titles.

5. Information necessary to facilitate investments can be readily secured.

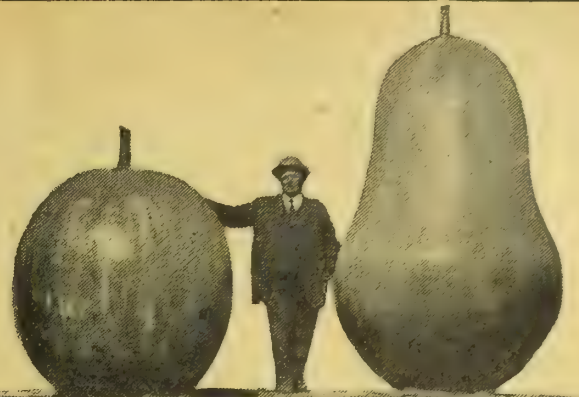
6. This would lead to rapid development of our water resources, increase our taxable wealth and indirectly promote other industries.

7. Capital would have opened for it a field of safe and profitable investment.

8. The small landowner already established along a stream would be benefited by the proposed law because it provides a system of state adjudication of water rights which relieves him of the danger of expensive litigation and removes the possibility of any unjust or illegal advantages being enjoyed by the large water-users as against the smaller user, or by the water-user higher up on the stream as against those lower down.

9. The laborer would have two new opportunities, one for work in the construction of canals, the other to obtain a home and independence of farm life.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.



**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
C. F. Lansing, Prop. Salem Ore.

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## SPRINKLERS

With a Hartford Sprinkler you can, with suitable water system, irrigate your garden or lawn with excellent results. It is used extensively. The spray is formed by a stream of water impinging upon the spoon at the top revolving it constantly. Under good pressure a radius of 40 feet can be irrigated at one sitting.

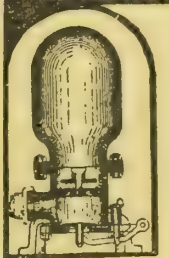
Prices, prepaid, each: 2 ft. length, \$1; 4 ft., \$1.25; 6 ft., \$1.50. Most of those used are 4 or 6 ft. lengths.

Send orders to

**HENRY MOHR HARDWARE CO.**

1141 Broadway, Tacoma, Wash.

## STERLING RAMS PUMP WATER



The **STERLING** is an **IMPROVED HYDRAULIC RAM** made in all sizes for irrigation projects, city water works, farm and home water supplies, etc. Every Ram guaranteed. Capacity 2 to 5500 gals. per minute. Prices from \$25 up.

Write for Catalogue.  
**HILL HYDRAULIC MACHINERY CO.**

615 Pacific Block, SEATTLE, WASH.

**IMMORTALITY CERTAIN** — Swedenborg's "Heaven and Hell," 400 pages, 15 cents postpaid. Pastor Landenberger, Windsor Place, St. Louis, Mo.



When you think of a satisfactory profit margin from dairy products or beef afforded by good ensilage corn, then you realize the value of high quality seeds that grow.

## Butzer's Seeds Grow

You can't keep in the ground

There is no pleasure like watching things grow. If you haven't received your copy of my 1915 catalog, drop me a postal and it will be sent to you at once. It is full of information.

**J. J. Butzer**

188-190 Front Street

Portland, Ore.

**Giant Winter Rhubarb**

**NOW BEST TIME TO PLANT**

Should return from \$1,000 to \$1,500 per acre first year. If interested in Rhubarb, Berries, Cactus, write J. B. WAGNER, Specialist, Pasadena, Cal.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WOODHORN

### THE NEEDED LESSONS.

We need to live—for life is more  
Than eating, drinking, wearing,  
Than seeking pleasures door to door  
And hither, thither, faring.  
By artificial dress and speech  
We teach the world to doubt us,  
And cry for riches out of reach  
While joy lies all about us.

We need to love—for love is more  
Than drinking, wearing, eating,  
The outer mortal striving for,  
The inner mortal cheating.  
The tinsel things of life we clutch  
While skies are blue above us,  
While here beside us at our touch  
Are those who long to love us.  
—Douglas Malloch.

### DO IT NOW.

Lose this day loitering, 'twill be the  
same story  
Tomorrow, and the next more dilatory;  
Then indecision brings its own delays,  
And days are lost lamenting o'er lost  
days.  
Are you in earnest? Seize this very  
minute—  
What you can do, or dream you can, be-  
gin it.  
Courage has genius, power and magic  
in it.  
Only engage, and then the mind grows  
Begin it and the work will be completed.  
—Goethe.

### CHILDREN WANTS A HOME.

Who will take three brothers, give  
them a good home, with church and  
school privileges, with a chance to  
play and a chance to learn how to  
earn an honest living, is the ques-  
tion the Washington Children's Home  
Society is asking. The three boys  
are lively, interesting lads and will  
be the best crop ever raised on the  
farm to which they are transplanted.

The Washington Children's Home  
Society has been organized and in  
continuous operation for eighteen  
years, and during that time has taken  
for placement more than twenty-  
seven hundred needy children. They  
are constantly getting reports from  
the children placed, many now grown  
to maturity and taking an active part  
in the world's work, a credit to the  
Society and to the State.

At the present time there are fifty  
children at the Seattle Receiving  
Home, among them a large number of  
boys who prefer country homes. The  
younger ones may be adopted after  
a reasonable trial period, and the  
others may remain permanently un-  
der conditions satisfactory to the  
home and to the Society.

Application blanks and full informa-  
tion may be obtained at the office  
of the state superintendent, 19-20  
Lippy Building, Seattle.

### FLOWERS THAT WILL "MAKE GOOD" IN YOUR GARDEN.

The average housewife, who has  
not much time to spare on the mat-  
ter, the child who is just becoming  
interested in growing plants, and the  
teacher who is laying out a school  
garden for the benefit of her pupils  
will undoubtedly welcome some  
simple suggestion along this line.  
The United States Department of  
Agriculture's specialist particularly  
recommends as satisfactory and eas-  
ily-grown flowers, the ageratum, the  
nasturtium, the petunia, the Cali-  
fornia poppy, and the Zinnia.

#### Ageratum.

This is one of the few blue flowers.

In its form it somewhat resembles  
the heliotrope but has no odor, grows  
well upon almost all soils and  
through a wide range of climate.  
Many combinations with them are  
possible. The plants are neat, bushy,  
and erect, and produce a profusion  
of brush-like flowers throughout the  
season. The dwarf blue sorts make  
fine borders and are much used  
where contrasting color effects are  
desired. For summer and fall bloom  
the seeds may be sown in April or  
early in May in well-prepared beds  
in the open. Seeds sown in August  
will produce good plants for winter  
flowering.

#### Nasturtium.

The large seeds of the nasturtium  
should be sown in rows where the  
plants are to grow, about 6 inches  
apart in the row and cover them  
about an inch deep. When all plants  
are up, thin so that they stand a foot  
apart if the soil is rich; if rather  
thin, it will be as well to allow them  
to stand at the planting distance.  
The plants should be given clean cul-  
tivation to induce rapid growth. If  
planted in the open at the same time  
that beans are planted, very satis-  
factory results will follow.

#### Petunia.

Sow seeds in the open about corn-  
planting time. The seeds are very  
small and should not be covered with  
earth in the ordinary way. They  
should be sown on the surface and  
brought in contact with the earth by  
firming it with a board.

#### California Poppy (Eschscholtzia).

The eschscholtzia is an annual of  
striking character both as regards  
the form and color of its flowers,  
which are bright and rich in their  
tints of yellow and orange. The  
plants average about a foot in height,  
have attractive silvery foliage, and  
produce their large poppy-like flowers  
quite lavishly from early spring un-  
til frost. The seeds may be sown in  
the open where the plants are to  
bloom as soon as the soil is in fit  
condition, in April or May and near  
the coast it may be sown in the au-  
tumn for early bloom. The plants  
enjoy a rich loam and should be al-  
lowed about 5 or 6 inches of space  
in the row. When used in beds they  
may be sown broadcast.

#### Zinnia.

This is easily grown from seed  
sown in the open ground. When  
sown in April the plants will bloom  
abundantly and continuously through  
the entire season. During the month  
of August zinnias are at their best.  
To secure large flowers and a pro-  
fusion of bloom the plants must be  
given ample room for full develop-  
ment, as well as an abundant supply  
of food. Strong, rich soils suit the  
zinnia. In addition to their use in  
the school garden, zinnias can be  
used for groups, beds, borders, gar-  
den lines, and summer hedges. Their  
average height is 1½ feet. The zin-  
nia is a rather large, formal flower  
whose colors range through the  
shades of red and yellow. Their sea-  
son of bloom is through the late sum-  
mer and autumn and the individual  
bloom lasts for a long time both on  
the plant and as cut flowers.



## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every mem-  
ber of the family its friend, and it digests easily for all.  
Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

## SPECIAL DAHLIA OFFER

Since it is impossible for us to gage the amount of sales upon any  
variety in advance we often have a surplus of Dahlias left in very  
good sorts. This enables us to make the remarkably low rates on col-  
lections given below. These bulbs will be labeled with their correct  
name and no two alike, chosen with regard to color, however they  
must be entirely our own selection.

No. 5—12 Cactus Dahlias good standard sorts \$1.50; 6 for 85c.  
No. 6—12 New Cactus Dahlias comprising late introductions, \$3.00;  
6 at \$1.75.

No. 7—12 Decorative Dahlias, \$1.25; 6 for 70c.

No. 8—12 Show Dahlias for \$1.25; 6 for 70c.

No. 9—6 Single Dahlias postpaid for 75c.

No. 10—Mixed Dahlias, a general mix.

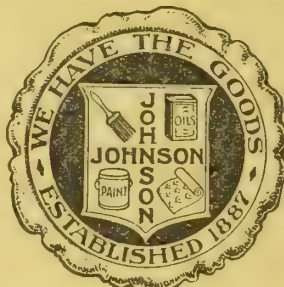
ture containing all classes, 12 for \$1.25.

Dandy Collection, 12 varieties, our selec-  
tion, untagged, postpaid, for \$1.00; 6 for 60c

Address

Gill Bros. Seed Co.  
Portland, Ore.

## A. S. Johnson & Co.



1142 C Street

Tacoma, Wash.

### WANTED A MAN

To retail Rawleigh Products, town and coun-  
try. Some good old vacant territories. Largest  
and best line. One of the oldest and largest  
companies in the world. Six Factories and  
Branches. All products supplied from new  
Pacific Coast Branch. Quick Service. Low  
Freight. We want only industrious men cap-  
able of earning \$100 and up per month and ex-  
penses. Must have means for starting expen-  
ses and furnish Con-  
tract signed by 2 re-  
sponsible men. Address  
W. T. Rawleigh Company,  
Oakland, Cal., giving  
age, occupation and  
references.

## PEAS Heaviest Yielding Peas Grown.

### Highest Priced Field Pea

KAUFMAN'S PROLIFIC, SHORT VINED, HAND PICKED BLUE BELL  
PEAS

\$240 PER ACRE. (Over 28 tons from 14 acres; was offered \$120 per ton)  
RECORD CROP OF PEAS!

Write for price list and circulars (used as supplementary reading in many  
High Schools).

Also Garden (Table) Peas

W. H. KAUFMAN

Bellingham, Wash.

## Milton Nursery Co.

We are too busy to write an "Ad"

Send your want list of Nursery Stock to

Milton Nursery Company, Inc.

Milton, Oregon

Catalog on Request

## The Puyallup Nursery

Hardy Ornamental  
Nursery Stock a  
Specialty

Large stock of Ornamental Evergreen Shrubs and Trees propa-  
gated on our own grounds. Make your own selections.

Rose Bushes, fine assortment in two-year and three-year sizes.

Berry Plants of all kinds.

A. LINGHAM

PUYALLUP, WASH.



**NON-SMOKERS MORE EFFICIENT.**

Dr. A. D. Bush, who enjoys a world-wide reputation as a physiologist, recently decided to an investigation along the lines of tobacco smoking in its relation to mental efficiency. In its issue of May, 1914, Efficiency Magazine had this to say in regard to the results:

"As a result of a series of experiments by Dr. A. D. Bush, it has been ascertained that tobacco smoking causes a decrease of 10.5 per cent in mental efficiency. There was a series of 120 tests on each of fifteen men in several different psychic fields. The men who volunteered for the tests were all medical students ranging in age from 21 to 32 years, of varying previous experience, from the farm laborer to the life-long student. The mental capacity of the students varied from the failure to the honor student. The subjects were attendants at the University of Vermont, where Dr. Bush is an instructor in physiology."

**BED BUGS.**

**Their Habits and Control. For the Horticulturist and Dairyman, by the Parasitologist of the University of Wisconsin.**

Though several species of bed-bugs may attack man, the chief-offender is the cosmopolitan, *Cimex lectularius*, which is typically a human parasite. This insect has recently attracted considerable attention among scientific men on account of the discovery that, in addition to its disagreeable blood-sucking habits, it is able to inoculate certain diseases into its victims when it feeds. The species of bed-bugs which live in swallow's nests, on bats, and in other places are specifically distinct and seldom trouble man. On the other hand, chicken houses are sometimes infested with *Cimex lectularius*.

The peculiar odor characteristic of bed-bugs is due to the secretion from a pair of stink glands which open just in front of the middle pair of legs in the adult, and on the dorsal side of the abdomen in immature insects. Similar glands are to be found in many of the other true bugs. Their use is to make the insects distasteful to other animals, particularly birds.

One female bed-bug kept under observation laid more than one hundred eggs during a period of sixty days. Eggs are usually deposited a few at a time, in cracks and crevices of beds and furniture, under seams of mattresses, under loose wall paper and in similar places. After six to ten days a young bed-bug, or nymph, hatches from each egg. The nymph grows slowly shedding its skin about every eight days, or five times in all, and feeding between each moult. After this adolescent period it acquires the rudimentary wings which mark him as an adult. The nymphal period varies with fluctuations in temperature, food, and other conditions. Under favorable conditions the bed-bug lives about seventy days as a nymph and feeds nine times, but if food is scarce it may wait a hundred and forty days before becoming mature. Professor Riley of Cornell University has kept unfed nymphs alive in a bottle for seventy-five days.

Adult bed-bugs are remarkable for their longevity. Dufour kept specimens in a bottle without food for a year. Their ability to fast, together

with their willingness to feed upon mice, bats, birds, and other small animals, enables them to persist for long periods of time in deserted habitations.

Bed-bugs usually crawl form their hiding places at night and attack the exposed parts of the bodies of sleeping persons. If undisturbed they feed until their bodies are greatly distended, and are then able to remain in hiding for a long time.

Insects which are so closely associated with man have naturally fallen under suspicion as possible disease carriers. Yet we have as yet comparatively little accurate information in this connection. The bed-bug can transmit bubonic-plague and certain South American fevers from one animal to another. It has also been claimed that Oriental sore, tuberculosis, syphilis, and typhoid fever may be so carried.

If a house is infested by bed-bugs, it is not necessarily due to neglect or uncleanness. The pests often migrate from adjacent dwellings, particularly those which are not occupied. They are frequently met with in boat and sleeper berths, and even in the plush seats of day coaches. They may be brought in the laundry or in the clothes of servants.

Chances of infestation are decreased by the use of iron beds and the reduction of hiding places for the bugs. Gasoline, benzene, or alcohol squirted into the cracks in beds at regular intervals will usually kill the adult insects, but the treatment should be repeated frequently for a time to insure the death of all new broods. Riley and Johannsen in their book of Medical Entomology recommend fumigation for severe infestation as follows:

"The simplest and safest method of fumigation is by the use of flowers of sulphur at the rate of two pounds to each one thousand cubic feet of room space. The sulphur should be placed in a pan, a well made in the top of the pile and a little alcohol poured in, to facilitate burning. The whole should be placed in a larger pan and surrounded by water so as to avoid all danger of fire. Windows should be tightly closed, beds, closets and drawers opened and bedding spread out over chairs in order to expose them fully to the fumes. As metal is tarnished by the sulphur fumes, ornaments, clocks, instruments, and the like should be removed. When all is ready the sulphur should be fired, the room tightly closed and left for twelve to twenty-four hours. Still more efficient in large houses, or where many hiding places favor bugs, is fumigation with hydrocyanic gas. This is a deadly poison and must be used under rigid precautions. Fumigation with formaldehyde gas, either from liquid or 'solid' formalin, so efficient in the case of contagious diseases, is useless against bed-bugs and most other insects."

**FISH AND MEAT COMPARED.**

"Generally speaking," says the department announcement, University of Washington, "fish supplies as much tissue building material to the body as meat, but different kinds of fish vary greatly in the amount of fat contained. The richer fish, as salmon, are more slowly digested, but are more hearty food than the delicate fish having a lower fat content. Halibut is an example of this latter class, and smelt are even more deli-



## Saves You Money Gets Better Results From Bees

The experience of bee-keepers in many parts of the United States is proving that no hive is more cleanly, more durable, or resists dampness, heat and cold more than

## WASHINGTON CEDAR DOVE-TAILED HIVES

This hive lasts longer, either painted or unpainted, than any other wood hive, and in any climate.

Every hive is made of air-seasoned and kiln-dried Washington Cedar, free of knots, and with perfectly cut tight-fitting joints. The production of large quantities in our well equipped plant enables us to sell Washington Cedar dove-tailed Hives at lower prices than other hives of similar quality.

A complete price list of these Cedar Hives, and of Bee Supplies will be sent you on request.

## Brew Manufacturing Company

Puyallup, Wash.

cate.

**Fish Cooked Too Much.**

"Lean fish, such as the smelt, flounder, cod and sole, with low fat content, are suitable for diets of invalids and children.

"Oysters are as easily digested as lean fish. Lobsters and crabs, on account of the coarse fiber of their meat, are of about the same digestibility as ham and other forms of pork.

"Fish is generally cooked too much and loses in flavor and attractiveness. As fish is low in extractives—the substance that gives to meat its flavor—and is generally lower in fat content than meat, it should be served with a good tasty sauce which will cover these two deficiencies. A well cooked fish, whether fried, steamed, boiled, sauted, broiled or baked, served with a well seasoned sauce, is an epicurean delight, as well as an economic triumph."

Following are recipes for fish sauces:

One-third cup butter; 3 tb. flour; 1½ c. hot water; ½ ts. salt; ¼ ts. pepper; yolks 2 eggs; 1 ts. lemon juice.

Melt half the butter and add flour and seasoning. Pour hot water on gradually. Boil 5 minutes and add remaining butter in small pieces. Add beaten yolks of 2 eggs and the lemon juice.

Hollandaise sauce: One-half cup butter; yolks 2 eggs; 1 tb. lemon juice; ¼ ts. salt; cayenne; ½ c. boiling water.

Put the butter in a bowl, cover with cold water and wash, using a spoon. Divide in 3 pieces; put 1 piece in a saucepan with yolks of eggs and lemon juice. Place saucepan in a larger one containing boiling

## M. C. TEBBETTS Incorporated

A Money-Saving Store, retailing Groceries and Furniture at wholesale prices, by our famous co-operative system.

**BUY YOUR GROCERIES** at lowest prices here. Three per cent freight allowance if you mention this paper.

"A little better than the store you thought was best."

M. C. TEBBETTS, INC.

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Tacoma, Wash.

## NORTHWEST GROCERY CO.

HEADQUARTERS  
FOR HOTEL AND  
CAMP SUPPLIES.

A one-cent postal with name and address will bring an up-to-date cash price list. Buying supplies on time is expensive. Conditions are improving. Why not make money by buying right?

Northwest Grocery Co.

13th and Commerce Sts.,  
Tacoma, Wash.

Oldest and Largest Mail Order House in the State.

water and stir constantly with wire whisk until butter is melted; then add the second piece of butter and, as it melts, the third. Add water, cook one minute and season. Finely chopped parsley may be added.



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### FRAKE'S HOLSTEINS.

Mr. P. A. Frakes, Scappoose, Oregon, is one of the pioneer Holstein breeders of the Pacific Northwest who has blazed the trail very efficiently for other breeders, realizing for himself and his patrons handsome margins of profit.

His first purchase was a registered bull at auction, consigned by D. C. Stewart of Forest Grove, Oregon, Butter Belles Prince, as yearling, for which he paid \$240. He was the second bull to qualify for Advanced Register. Mr. Frakes' friends expressed the opinion that he was parting from his money too easily.

In his own words giving his experience, in the Rural Spirit, Mr. Frakes says:

"Twenty-two of Butter Belle's Prince's calves developed into good, fairly gentle dairy cows. But about 1890 I bought two registered Holstein cows at the State Fair, one from P. K. Walters and one from L. K. Wallace of McMinnville. Both of the cows were brought from Iowa, but were early importations from Holland. Later I bought three head that were shown at the "Domestic and Fat Stock Show," in the old pavilion on Washington Street in Portland. They were brought west and shown by Z. B. Yearling of Junction, Idaho. About 1894 I bought at auction the remainder of the Stewart herd from T. R. Cornelius—about seven or eight head, paying from thirty-six to forty-five dollars a head. At that time there was still practically no demand for Holsteins and most of the young bulls went for veal. If sold for breeding, fifteen dollars was about the average price.

"In 1902 good demand for registered Holsteins had begun. I sold a few to go to Japan, I then took counsel with my good wife, who was the original dairyman of the family, and decided to go to New York for a herd. We borrowed \$1500 from the United States National Bank of Portland, and I got back on May 1 with seventeen head of females from the Stevens & Sons' herd at Lacona, N. Y. The most nervous night I ever spent was when I had those cattle loaded, with that much money invested in them, and a trip across the continent ahead of me. I had already shipped out Lundy Oregon De Kol from the Stevens herd and Clothilde Grace Sir Hengerveld from Wisconsin. When I arrived safe with those cows and heifers I had a herd of sixty-five head and have always considered that was my real foundation of being a breeder.

"As the Lewis and Clark Exposition became a certainty I felt it would be up to me to make an exhibit and as John D. Irvin of Minneapolis had won at the St. Louis Fair I went back and bought a show herd from him, including Chloe Mechthilde, the cow that won grand championship for me at the Lewis and Clark. Sir Mechthilde Jewel was

her son. I also won grand championship on bull with Lundy Oregon De Kol, besides other good prizes. I was then pretty well satisfied that I was a Holstein breeder and sales and prices both began to increase.

"Something like ten years ago Wm. Bishop, the Chimacum, Wash., Holstein breeder, came down and purchased a cow and a young bull for himself and one for a neighbor, M. R. Watson. Watson's cow was Netherland Fleta, one of the cows I first purchased at the Oregon Fair. She dropped a heifer calf that became the famous Margie Newman, that holds the world's record for one day's milk production and a remarkable record for both seven and thirty day's milk and butter production, made under ordinary dairy conditions up at Chimacum. She was sold as a heifer and again changed hands before her worth was fully known. I got \$100 each for the two cows and \$50 each for the bull calves and felt rather proud of the sale, though I knew I was letting good stock go. This does not sound much like the present time when a good young bull brings all the way from \$100 to \$800.

"I have had my share of ups and downs in the show ring and at home. Sometimes I have won and sometimes I have lost. I have felt sorry for myself sometimes and sometimes for the other fellow. I have lost cattle by blackleg and have often had discouragements just when I felt things were coming my way. But the fact remains that what little I have, including a good home, a good Holstein herd and 600 acres of good land, must be credited to the Holstein.

### WAHKIAKUM COUNTY DAIRY NOTES.

#### Purebred Sires, Good Cows Increased.

According to the County Agriculturist in Wahkiakum County, Washington, as reported by Director Cardiff, dairying is the leading feature of farm operation. An investigation of fourteen dairy herds of this county shows a production of \$20 more per cow by the herds that have been headed by registered sires than is produced by the herds using grade and scrub sires. During the year eight registered sires have been purchased to replace scrubs. During 1913 twelve were purchased. Since the twenty bulls head herds containing about 350 cows, this should result in a financial gain of \$7000 per year.

#### Quality of Cows.

A farm survey of 44 farms by the County Agriculturist shows that the average receipts from milk and butterfat was \$60 per cow on the 16 poorest farms and \$92 on the 12 best farms. The receipts from many cows were much less than \$60. Hence, the importance of determining the performance of each cow in order to be able to discard the poor ones. Dur-



## The Survival of the Fittest

TRIED IN THE FURNACE OF competition and subjected to the test of years of practical use on nearly 2,000,000 farms the world over, the De Laval has proved its overwhelming superiority to all other cream separators.

TWENTY YEARS AGO there were as many makes of factory as of farm separators, but for the past ten years the De Laval has had this field almost to itself, 98 per cent of the cream separators in use by creamerymen and market milk dealers today being of the De Laval make.

IT HAS TAKEN THE INEXPERIENCED farmer a little longer to sort the true from the untrue, the wheat from the chaff, in the maze of conflictory catalog and local dealer separator claims, but year by year the ever-increasing proportion of farm separator buyers is reaching the same conclusion as the creameryman—that the De Laval is the only cream separator they can afford to buy or use.

MANY OTHER CREAM SEPARATORS have come into the limelight of publicity for a

few short months or a few short years, claiming to be "as good as" or "cheaper" than the De Laval, but their users have sooner or later found them lacking in some one respect or another, and even where a few have seemingly done well their users have come to learn that the De Laval was a still better machine.

THE UNFIT OR THE LESS fit cannot possibly survive for long in separators or anything else. Think of all the separators you used to see advertised so extravagantly in your favorite farm papers. Where are they now? Why do you seldom, if at all, see their names mentioned? Simply because the fittest must survive and the others must fall out of the race.

THE DE LAVAL HAS TRIUMPHED over all other separators, and its supremacy is now almost as firmly established in farm as in factory separators because its separating system, design and construction are essentially different from and superior to other separators.

A De Laval catalog to be had for the asking explains and illustrates these differences. A De Laval machine, to be had on test or trial from the nearest local De Laval agent, does so better still. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## FAIR ACRES STOCK FARM

Will sell 36 head of registered Jersey Cattle in the Polk Co. Jersey Breeders Consignment Sale, held at Independence, Ore., May 12, 1915.

Of the 36 head there will be 30 females, 20 of which will be cows; 9 imported, 11 American bred; 13 in the Register of Merit, and 14 males and females will be from Register of Merit cows. Where 15 or more cattle are bought from us we will pay the freight to all points in the adjoining States.

Time will be given to all those who desire it if bankable notes can be given.

"Plan to attend." Write us and we will have catalogs sent.

JNO. B. STUMP & SON

"Type and Production Combined"

Monmouth, Ore.

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SLAE

Upwards of 100 HEAD VERY CHOICE 2 and 3-year-olds, now coming fresh, out of pure bred sires and good producing dams; they are of good dairy type and in line to make large producers. They were selected as youngsters last year, have been well wintered and are in excellent condition of health and flesh. Their calves are nearly full pure bred. Early buyers have opportunity to make some choice selections. For further particulars and prices write or call.

F. F. FOLSOM  
KENT

WASH.



ing the year 1914 sixty-two farmers co-operated in weighing and testing the milk from 834 cows. This is an increase of over 700 cows during the last two years, a little more than 100 cows being under test when the farm bureau work began in the county in November, 1912.

By keeping records of his cows and using good bulls one dairyman increased the production of butterfat 18 lbs. per cow each year for five years. If as good results are secured with the 700 cows this will mean an increased production of 12,600 lbs. of butterfat each year. At 30 cents per pound this will amount to a gain each year of \$3,780 over the previous year.

#### GUERNSEYS FOR AUGUSTINE & KYER.

Mr. H. A. Kyer, of Augustine & Kyer, Seattle, returned from an extended trip east recently and after a careful inspection of many leading Guernsey breeders' herds in Iowa, Illinois, and Wisconsin, purchased a number of registered Guernseys from F. S. Peer of Crawford, New Jersey.

Among those of imported heifers, are Donnington Joan 4th 9975; Deanies Squire No. 2734 and Maids Honor No. 2060, out of Son of Galaxy's Sequel; Clairmont 7th No. 2418, out of Langley Gray Boy; and Royal Governor of the Gree, out of Gov. Chene.

Among the cows purchased from Mr. Woods are Bessie B. of Glen Grove, No. 30649, and Elsie's Bell of Maple Grove, No. 45737.

The selections made by Mr. Kyer after careful inspection of many hundred cattle, are to be added to his registered Guernsey herd near Seattle. They are from the best families on the Isle of Guernsey, and will be transported to the coast as soon as quarantine regulations will permit.

Augustine and Kyer have now a milking herd of 100 cows of which nearly half are Holsteins choice high grades and the balance Guernseys, including some of the best registered animals of this breed to be obtained. The young bulls offered for sale last year in the columns of this paper have been sold except a 2-year old choice animal out of Melba's Prince and May Rose with butter record over 500 pounds a year.

#### SOME OFFICIAL HOLSTEIN RECORDS.

In Puget Sound Herd, Chimacum, Wn. Editor Horticulturist and Dairyman:

Official records made with the Puget Sound Herd of Holstein Friesian Cattle during the last few months are as follows:

Chimacum Wayne Boon 2nd, the two year old heifer which made an official record last August of 22.56 lbs. butter in 7 days and 89.25 lbs. in 30 days, has produced in the yearly test up to March 1—7 months—14,886.7 lbs. milk and 586.4 lbs. butter.

Sena De Kol Ononia, a 3-year old, produced 572.2 lbs. milk and 24.58 lbs. butter in 7 days; 2367.4 lbs. milk and

102.8 lbs. butter in 30 days. In 3 months in the yearly test has to her credit 6,400 lbs. milk and 275.8 lbs. butter.

Cornucopia De Kol Beauty, 4-year old, produced 517.4 lbs. milk and 20.72 lbs. butter in 7 days. She gave 78.5 lbs. milk in one day.

Princess Pontiac Frenesta Burke, a 2-year old heifer which made a record of 19.5 butter in 7 days and 74.48 lbs. milk in 30 days last June was tested 8 months after calving and produced 287 lbs. milk and 12.39 lbs. butter and is 5 months in calf the time of test.

Chimacum Pioneer, age 2 years 4 months, produced 410 lbs. milk and 18.13 lbs. butter in 7 days. She is in the yearly test.

Mollie Pietertje Aaaggie 3rd, age 2 years 4 months, produced 383.8 lbs. milk and 17.48 lbs. butter in 7 days.

Chimacum Segis Cornucopia, age 2 years, produced 297.4 lbs. milk and 13.24 lbs. butter in 7 days. This heifer is in the yearly test and was out of condition and held her afterbirth at the time of this test.

Rhoda May 2nd Clothilde and Rhoda May 2nd Clyde (twins), produced respectfully 16.78 lbs. butter and 17.14 lbs. in 7 days, these records were made shortly after arriving from Wisconsin and not being dry before freshening.

Our first crop of calves from the worlds average record milk and butter bull, Sir Chimacum Wayne, has commenced to arrive and are a fine looking lot and we will be able to fill orders for sons of his from cows and heifers that is making large yearly records.

#### CHIMACUM STOCK FARM.

Wm. Bishop, Proprietor.

Per John Van Trojen, Jr.

#### MILL FEEDS BEYOND REACH.

#### Dairymen Substituting Dried Beet Pulp.

With the price of bran and other mill feeds soaring nearly out of sight and the price becoming almost prohibitive, more and more dairymen are looking to dried beet pulp as a solution of their feed problem. Of course this feed has been well known and used by dairymen all over the country for some time, but many of those who have been using bran and other mill feeds have hesitated about making the change. The price of dried beet pulp has not been advanced and holds practically the same as it did before the war.

Dried beet pulp is simply the pure shredded root of the sugar beet with only the sugar and water extracted and can be had either plain or with molasses. When moistened it swells to six times its original bulk, thus furnishing as great or greater succulence than silage, and more than five times as much nutriment. It makes a splendid combination with alfalfa as it contains an abundance of carbohydrates and is not only valuable for feeding to dairy cows but also for hogs, horses, poultry, sheep, etc.

If you are not familiar with dried beet pulp, or are a little uncertain as to how to feed it or where it can be obtained in your locality, some users suggest that you drop a postal to the Larowe Milling Company, sixth floor, Central Building, Los Angeles, California, asking for a copy of their free booklet "Profitable Feeding."

#### SUCCESSFUL HOLSTEIN SALE AT SNOHOMISH.

The public sale of Registered Holstein cattle held by the Western Washington Holstein Breeders Association at Snohomish, on March 17, was a decided success. The attendance was good and the prices offered and paid throughout were very fair.

Messers Gue and Linberger conducted the sale in their usual proficient manner. It takes a rapid thinker with good vocabulary like Mr. Gue to

## Cascade International Stock Show

Will Advise You Where You Can Buy

GENERAL UTILITY  
ANIMALS

as well as

REGISTERED SIRES  
AND DAMS

For Information Write

A. J. SPLAWN, President,

S. B. NELSON, Secretary,

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

## THE INLAND EMPIRE JERSEY BREEDERS ASSOCIATION

Will Sell at

PUBLIC AUCTION

on the

Interstate Fair Grounds at Spokane, Wash.

MONDAY MAY 10th, 1915

80 to 100 Head of Registered Jersey Cattle

Consignors:

T. S. Griffith,  
Glan Tana Farm, Spokane, Wash.

Chas. H. Talmadge,  
Silver Birch Farm, Newport,  
Wash.

J. P. Graves,  
Waikiki Farm, Spokane, Wash.

D. C. Dilworth,  
Buckeye, Wash.

A. A. Newberry,  
Tredinnock Farm, Mica, Wash.

A. G. Woodward,  
Fairbanks, Wash.

A. V. Bradrick,  
Imperial Farms, Cove, Wash.

E. E. Flood,  
Broadview Farms, Rosalia, Wash.

Every animal sound and tuberculin tested. Register of Merit cows and their offspring, as well as a number of prominent show winners, will be included. For catalogue ready about April 1st, address either the Secretary or Sale Manager.

COL. D. L. PERRY, Auctioneer

W. T. NEWBERRY,  
Secretary,  
Mica, Wash.

CHAS. M. TALMADGE,  
Sale Manager,  
Newport, Wash.

## PUGET SOUND HERD

### Holstein-Friesian Cattle — Duroc Jersey Swine

Home of Sir Chimacum Wayne, the world's greatest milk and butter bull; "Chimacum Wayne Boon" (dam of the above) A. R. O. record at 4 years, 33.69 lbs. butter in 7 days, 137.26 lbs. in 30 days, and full sister "Alice Veeman Hengervelt," butter at 4 years 28.04 lbs. "Doris King of the Pontiacs," the best bred daughter of "King of the Pontiacs" in the West; she is sister to the 44-lb. cow.

Seventy-five A. R. O. cows in herd. All bulls for sale are from official tested dams. Write for prices and mention this paper.

Wm. Bishop, Chimacum, Wash.

## Waikiki Farm

Breeders of

JERSEY and Ayrshire CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## Ayrshires

Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice purebred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

EDWIN PETTETT Dungeness, Wash.



keep a large crowd of people smiling good naturally while they are paying from \$100 to \$1035 each for 75 head of the black and white registered cattle without any dissatisfaction at the close. The bidding was spirited and the buyers were well prepared for selections made by means of the catalog sent to applicants by secretary Winters.

Following is a list of the consignors, sales and buyers at prices paid.

**CONSIGNED BY WILLIAM BISHOP, CHIMACUM, WASH.**

**Females**

| Name of Animal                       | Born           | Buyer                        | Price  |
|--------------------------------------|----------------|------------------------------|--------|
| Bos Monti .....                      | March 4, 1913  | H. L. Hansen, Pt. Townsend   | \$ 270 |
| Aaggie Beauty Artis Cornucopia ..... | April 15, 1908 | H. L. Hansen, Pt. Townsend   | 510    |
| Bos Lorinda .....                    | March 12, 1913 | Carnation Stock Farm .....   | 200    |
| Aaggie of Lulu .....                 | March 7, 1909  | H. L. Hansen, Pt. Townsend   | 250    |
| Mollie Pieterije Aaggie .....        | Sept. 6, 1912  | Carnation Stock Farm .....   | 405    |
| Violet Davenport .....               | April 20, 1914 | Jas. H. Moore, Mt. Vernon .. | 185    |
| Violet Pauline .....                 | April 2, 1914  | Thos. Yarr, Center .....     | 185    |
| Rhoda May 2nd Clyde .....            | July 5, 1907   | C. E. Lewis, Seattle .....   | 330    |
| Rhoda May 2nd Clothilde .....        | July 5, 1907   | C. E. Lewis, Seattle .....   | 330    |
| Cornucopia De Kol Beauty .....       | May 16, 1910   | Greenbank Co., Greenbank ..  | 340    |
| Chimacum Bell Fayne .....            | Feb. 21, 1914  | Hugh Nesbit .....            | 190    |
| Maderia Cornucopia .....             | April 11, 1914 | Yarr Bros., Chimacum .....   | 170    |
| Nannette Cornucopia Maderia ..       | March, 1914    | Thos. Yarr, Center .....     | 185    |
| Colantha Sadie Vale .....            | Sept. 16, 1911 | E. J. Stevens, Monroe .....  | 550    |
| Selah Johnson .....                  | May 12, 1912   | Yarr Bros., Chimacum .....   | 230    |
| .....                                | Nov. 19, 1914  | Thos. Yarr, Center .....     | 170    |

**Males**

|                                 |               |                               |      |
|---------------------------------|---------------|-------------------------------|------|
| Chim. Spring Farm King Ponitac  | June 15, 1914 | B. S. Fryar and A. E. Smith.. | 750  |
| Chim. Cornucopia Paul De Kol .. | May 30, 1914  | Wm. McCulloch, Snohomish ..   | 190  |
| Chimacum Daniel Boon .....      | June 29, 1914 | P. L. Govan, Sequim .....     | 1035 |

**CONSIGNED BY D. J. DE HOOGH, LYNDEN, WASH.**

**Females**

|                                 |                |                              |     |
|---------------------------------|----------------|------------------------------|-----|
| Effie Empress Wayne Beets ..... | Dec. 7, 1912   | J. H. Smith, Lynden .....    | 255 |
| Oak Terrace Beets De Kol .....  | July 10, 1912  | C. H. Peach, Hartford .....  | 200 |
| Oak Terrace Gem 2nd .....       | March 20, 1914 | Jas. H. Moore, Mt. Vernon .. | 200 |
| Oak Zozo Johanna Gem .....      | Dec. 8, 1913   | A. J. Ross & Son, Sumner ..  | 40  |
| Zozo's Beauty .....             | May 15, 1914   | Jas. H. Moore, Mt. Vernon .. | 180 |
| Queen Wayne Zozo Johanna .....  | Dec. 10, 1913  | J. H. Smith, Lynden .....    | 160 |

**CONSIGNED BY HUGH NISBET, CHIMACUM, WASH.**

**Males**

|                               |                 |                             |     |
|-------------------------------|-----------------|-----------------------------|-----|
| Cornucopia Wayne Nelson ..... | May 26, 1914    | Van Woerden & Fisher .....  | 110 |
| Ononis Wayne Pieterije .....  | May, 10, 1914   | J. H. Shadmer, Snohomish .. | 135 |
| .....                         | August 23, 1914 | Chas. Harmon, Mt. Vernon .. | 95  |

**CONSIGNED BY J. H. HULBERT, JR., MT. VERNON, WASH.**

**Males**

|                                 |               |                              |     |
|---------------------------------|---------------|------------------------------|-----|
| Johanna Canary Korndyke De Kol  | Apr. 6, 1914  | A. J. Van Trojen, Chimacum   | 130 |
| Joh. Korn. De Kol Netherland .. | May 1, 1914   | J. B. Knutson, Silvana ..... | 45  |
| Hartog Sarcastic Lad De Kol ..  | Sept. 2, 1912 | M. J. Unzelman, Snohomish .. | 95  |

**Females**

|                                   |               |                            |     |
|-----------------------------------|---------------|----------------------------|-----|
| Winnie Homestead Girl De Kol ..   | July 1, 1914  | N. E. Waugh, Mt. Vernon .. | 175 |
| Pearl Portia De Kol 3rd .....     | Jan. 10, 1914 | Jas. H. Moore .....        | 200 |
| Netherland Violet Pieterje 2nd .. | April 6, 1914 | R. E. Waugh, Mt. Vernon .. | 195 |

**CONSIGNED BY HERMAN STEFFEN, MONROE, WASH.**

**Females**

|                                |                |                               |     |
|--------------------------------|----------------|-------------------------------|-----|
| Chimacum Lalla De Kol .....    | Dec. 16, 1908  | Daniel Bekins .....           | 200 |
| Lalla Cornucopia De Kol .....  | April 7, 1913  | J. Spencer Purdy, Sultan ..   | 305 |
| Jewel of Monroe .....          | April 27, 1912 | G. H. Clark, Burlington ..... | 260 |
| Jewel of Chimacum 2nd .....    | Feb. 26, 1913  | J. Specer Purdy, Sultan ..... | 205 |
| Star Edgely De Kol .....       | Aug. 21, 1913  | S. C. Scott, Burlington ..... | 185 |
| Fanny Korndyke Jewel .....     | Jan. 28, 1911  | Chas. Eldridge .....          | 125 |
| Princess Aaggie Fobes .....    | Nov. 4, 1910   | J. Specer Purdy .....         | 315 |
| Duchess Homestead De Kol ..... | Sept. 9, 1909  | A. H. Buck .....              | 225 |

**Males**

|                                 |                |                              |     |
|---------------------------------|----------------|------------------------------|-----|
| .....                           | Sept. 27, 1914 | Van Woerden & Fisher .....   | 80  |
| Sir Korndyke Minita Lyons ..... | June 26, 1914  | Ed J. Stevens, Monroe .....  | 100 |
| Prince Tritomia Bakker .....    | March 28, 1914 | D. J. De Hoogh, Lynden ..... | 75  |

**CONSIGNED BY THE GREENBANK CO., GREENBANK, WASH.**

**Males**

|                                   |              |                              |     |
|-----------------------------------|--------------|------------------------------|-----|
| Greenbank's Sir Ormsby Heng'ld .. | Mar. 2, 1914 | Daniel Bekin, Bothel .....   | 305 |
| Greenbank's Nudine De Kol Burke   | May 20, 1914 | J. D. De Hoogh, Lynden ..... | 300 |
| Greenbank's Midnight .....        | Oct. 5, 1913 | Van Woerden & Fisher .....   | 200 |

**CONSIGNED BY ALBERT E. SMITH, SUMAS, WASH.**

**Females**

|                                 |                |                               |     |
|---------------------------------|----------------|-------------------------------|-----|
| Canary Spofford Empress .....   | Jan. 6, 1911   | Dr. Sall & Stockwell .....    | 250 |
| Annie Tucker Mercedes .....     | March 13, 1909 | Greenbank Co., Greenbank ..   | 320 |
| Heilo Johanna Korndyke .....    | Jan. 16, 1910  | S. H. Clark, Burlington ..... | 270 |
| Keep On Pauline .....           | Oct. 26, 1906  | Greenbank Co., Greenbank ..   | 250 |
| Helena Wickford 3rd Poach ..... | May 25, 1909   | Hugh Nisbet .....             | 335 |
| Johanna Canary Ormsby .....     | Nov. 11, 1909  | Dr. Sall & Stockwell .....    | 280 |
| Lady Oak Burke .....            | Nov. 15, 1907  | Dr. Sall & Stockwell .....    | 235 |

**CONSIGNED BY JOHN C. BURNAM, SNOHOMISH, WASH.**

**Females**

|                                |               |                              |     |
|--------------------------------|---------------|------------------------------|-----|
| Beachview Katrina De Kol ..... | July 19, 1905 | T. J. Bowen, Snohomish ..... | 245 |
|--------------------------------|---------------|------------------------------|-----|

**Males**

|                             |               |                            |    |
|-----------------------------|---------------|----------------------------|----|
| Burnamwood De Kol Bos ..... | Feb. 13, 1914 | Van Woerden & Fisher ..... | 95 |
|-----------------------------|---------------|----------------------------|----|

**CONSIGNED BY HUGH NISBET, CHIMACUM, WASH.**

**Females**

|                           |               |                            |     |
|---------------------------|---------------|----------------------------|-----|
| Bessie Calamo Maine ..... | April 1, 1909 | J. Van Trojen, Chimacum .. | 205 |
|---------------------------|---------------|----------------------------|-----|

**CONSIGNED BY CHAS. ELDRIDGE, CHIMACUM, WASH.**

**Females**

|                               |                |                             |     |
|-------------------------------|----------------|-----------------------------|-----|
| Juanita Babe .....            | Feb. 26, 1914  | Mrs. Chas. Eldridge .....   | 225 |
| Prince Chimacum Cornucopia .. | June 22, 1914  | J. H. Smith, Lynden .....   | 185 |
| Glassa J 2nd .....            | March 20, 1908 | Greenbank Co., Greenbank .. | 405 |

**CONSIGNED BY HOLLYWOOD FARM, HOLLYWOOD, WASH.**

**Females**

|                               |                |                               |     |
|-------------------------------|----------------|-------------------------------|-----|
| Clothilde Adele De Kol .....  | May 8, 1911    | S. C. Scott, Burlington ..... | 170 |
| Clothilde Beets Floa .....    | April 29, 1912 | E. R. Barkstrom, Everett ..   | 180 |
| Belle Setske Kakenstein ..... | April 12, 1912 | G. H. Clark, Burlington ..... | 185 |
| Hollywood Segis Aaggie .....  | Aug. 28, 1913  | Dr. Sall & Stockwell .....    | 240 |

**Males**

|                                   |                |                               |     |
|-----------------------------------|----------------|-------------------------------|-----|
| Hollywood Canary Palmer .....     | April 22, 1914 | John Furness, Norman .....    | 80  |
| Hollywood Pontiac Lilth De Kol .. | Jan. 15, 1914  | G. H. Clark, Burlington ..... | 105 |

**Save  
Milk  
Money**



**Raise  
Better  
Calves**

IF there ever was a reason for feeding calves costly milk, that reason no longer exists.

## LILLY'S CALF MEAL

Contains all the necessary elements for feeding strong, vigorous calves at a fraction of the cost of milk. The largest and most up-to-date dairymen no longer feed butter fats. Why? Because calf meal gives better results for less money. *Go to your dealer and if he does not have Lilly's Calf Meal, we will see that you are supplied. Send for our Calf Book. It is the most practical bulletin on raising calves ever printed.*

Seattle

THE CHAS. H. LILLY CO.

Portland

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. Two of our 5-year-old cows each made over 27½ lbs. butter in 7 days. 3-year-olds 20 to 23 lbs., and a 2-year-old 17 lbs.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

### WILLIAM TODD & SONS

NORTH YAKIMA, WASH.

"WE PURCHASE and always pay best prevailing market prices on all kinds of LIVE STOCK, HIDES, PELTS, TALLOW, and POULTRY, and will quote you if you will advise us what you have to offer for sale. In return we offer to sell you our New Process Beef Scraps for chickens. Bone Meal; Granulated Bone; Digestible Tankage for hog food, and all kinds of fertilizers.

We patronize Home Industry and ask you to reciprocate."

### CARSTENS PACKING COMPANY

Please mention this paper

Tacoma, Washington

## A YRSHIRES

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices. J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington

## A. J. C. C. JERSEYS

### Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

### J. B. EARLY

Grandview, Wash. (Yakima County)

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records of dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

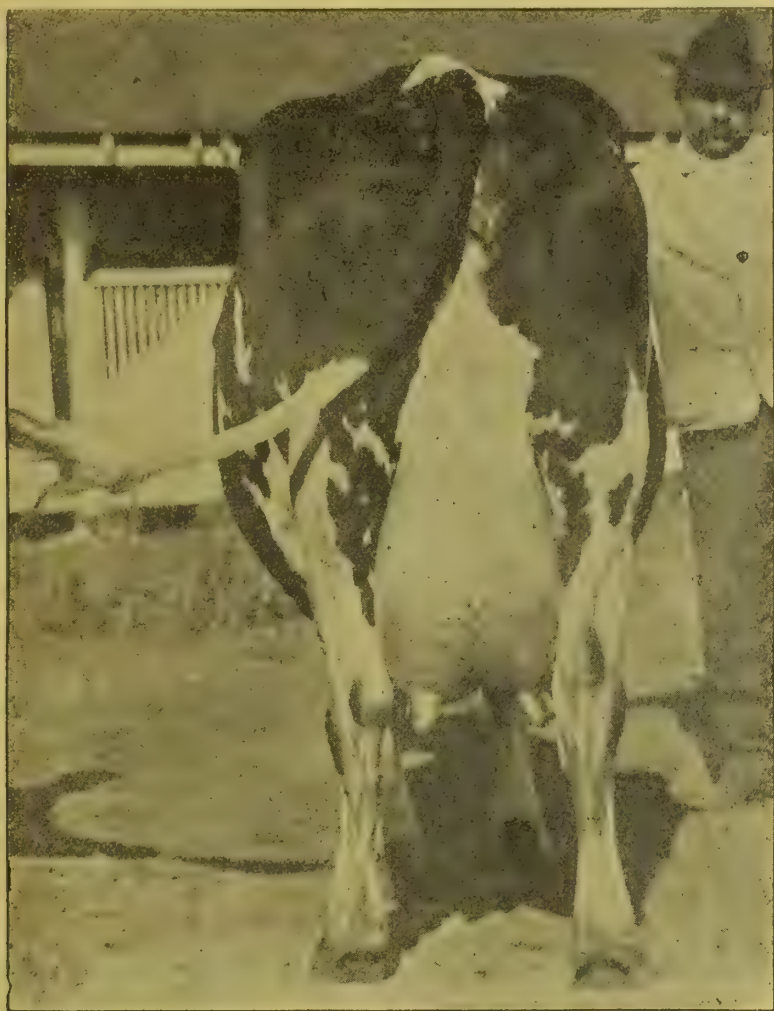


## Pioneer Holstein Breeder

Included in the Holstein Herd of P. A. Frakes, Scappoose, Oregon, are such cows as A & G, Inka, McKinly A. R. O., with seven day records as follows: butter, 29.62 pounds, milk, 661.10 pounds, per cent. fat, 3.58. Blanche De Hengerweld, butter, 33.2 lbs; Milk, 688.9 lbs; fat, 3.86. Chloe Mechilde, butter, 23.62 lbs; Clothilde Lunde Artis, butter 19.92 lbs; Cloeanda de Kol Artis, butter, 27.21 lbs; Pontiac Clothilde de Kol 2nd, butter 37.21 lbs; per cent fat, 4.6. Her yearly record is 25,318 lbs. milk, butter 1271.6 lbs. of 4.02 per cent. fat. Closely related in blood are more than 100 cows of like records. When Mr. Frakes sold

Frakes. One of them turned out to be a 28.96 lb. cow. Mrs. C. A. Sanders, Ellensburg, bought herd bulls at different times. Mr. C. P. Dobler, of Menlo, Washington, may surprise some of the breeders with new records for he took over recently, four herd bulls. Mrs. Jessie Gregg Adna is also likely to spring some high records from her purchases.

Mr. Frakes is the pioneer Holstein man of the Pacific Northwest. In 1896 he owned all the registered cattle in Oregon. He was the first to exhibit a full herd at the Washington State Fair, North Yakima, having then the Great cow Peek a Boo Artis. Refer-



Peek-a-Boo Artis, the famous Holstein in the herd of P. A. Frakes, Scappoose, Oregon.

the dam of Margie Newinan to Mr. Eldridge for \$100, the buyer thought he was "stung," but having some good early day grit concluded to try out this "new fangled" Registered stock breeding business.

Mr. Otto Rungren, Mt. Vernon, bought Lunde Oregon Fine from Mr. Frakes for \$75, and she was the first cow in Washington to record 23 lbs. butter per week.

Mr. Harry Krutz, of the Washington Loan and Trust Co., paid \$600 for three cows leaving the selection to Mr.

ring to that date Mr. Frakes takes delight in reminding his good brother breeders of the hot chase for winnings. Among exhibitors were Mr. John L. Smith, Wm. Todd and Son, G. M. Richards also another best friend Mr. E. B. Marks, who sat under a Holstein cow at that State Fair "sweating blood" trying to win over Peek a Boo Artis when she gave 65½ lbs. milk and made 2 lbs. butter in one day on alfalfa hay.

In Mr. Frakes' herd on the sires side is the blood of such bulls as DeKol

## LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

P. A. FRAKES

Scappoose, Oregon

## Special Spring Offer

Those desiring to make selections of some choice young cows now freshening, heifers or young bulls of ideal dairy type should write or call at once. Orders for individuals or car lots promptly filled.

One carload of extra fine high-grade young Holstein-Friesian cows, due to freshen this Spring, bred to registered Holstein bulls.

One carload extra fine Holstein-Friesian heifers springing, bred to registered Holstein bulls.

Twenty head extra fine HIGH-GRADE youngsters sired by King Pontiac Irene, a grandson of the King of the Pontiac, America's finest bull. Ages from one to twenty months—average 12 months, out of big producing high-grade dams. The first daughters of this sire came fresh this spring and made better than 50 pounds per day. A chance for somebody who appreciates good stuff.

Five registered Holstein yearling bulls; good enough to head any herd.

## John F. Janssen

"THE MEADOWS," SEATTLE, WASH.

The Greatest Dairy Stock Market in the Northwest

## ZENOLEUM

### A Remedy for All Live Stock

A Standardized coal-tar disinfectant, insecticide, animal dip; always the same.

Use Zenoleum; get more milk from your cows; more pork from your hogs; more wool from your sheep; more eggs from your hens; more work from your horses. In short, make more money in the Live Stock business by using this great preventative.

Used and Endorsed by 50 Agricultural Colleges

Our guarantee: If Zenoleum is not all that YOU think it ought to be, you can have your money back; no letters, no talk, just money back.

Prices: postpaid—8 oz.

25c; qt. 50c; gal. \$1.50.

Ask for our free 1915 Live

Stock Life Insurance Policy.

The Zenner Disinfectant Company

351 Lafayette Ave., Detroit, Mich.

Use Zenoleum Lice Powder for Poultry.

2nd. B3, sire of 116 A.R.O. daughters, 737 grand daughters. King of the Pontiacs, 119 A.R.O. daughters, 347 grand daughters. Hengerveld DeKol, sire of 116 A.R.O. daughters, 656 grand daughters. King Segis, sire of 85 A.R.O. daughters and 681 grand daughters, also the greatest bull that ever lived, Pontiac Korndyke, sire of 106 daughters, 656 grand daughters, besides many others.

Mr. Frakes has 105 registered and pure bred cattle in his herd and a rich grazing pasture of 600 acres. High quality is the constant aim of this pioneer Holstein Breeder.



Famous Herd of Registered Holsteins on the farm of their owner, P. A. Frakes, Scappoose, Ore.



### JOHNSON'S UNIFORM HOLSTEINS.

A trip to the Cottonwood Grove Stock Farm of Registered Holsteins at Scappoose, Oregon, the property of Mr. Albert Johnson, would afford any admirer of a bunch of uniform type of high record Registered Holsteins much pleasure. Mr. Johnson has been a breeder for about 20 years but during the last 10 years has made material progress, being now the owner of a leading registered Holstein herd of about 85 head with a number of sires of noted merit and famous records.

Having established a choice registered herd Mr. Johnson bought, some years ago, the sire Jessie Fobes 7th Homestead De Kol at a long price. The average record for his dam and sire's dam are, milk, 493.4 lbs. butter, 22 lbs., per cent fat 3.57 for 7 days. Another sire he purchased from which part of his herd is built up, is Dutchland Sir Fayne Colantha whose dam and sires dam average in 7 days, butter 30.76lbs, milk 664.35 with monthly record of 122 lbs. butter and 2,698.8 lbs. milk.

Another sire in this herd is Pontiac Zyme with 62½ per cent. same breeding as the wonderful cow Pontiac De Nijlander, whose 3 consecu-

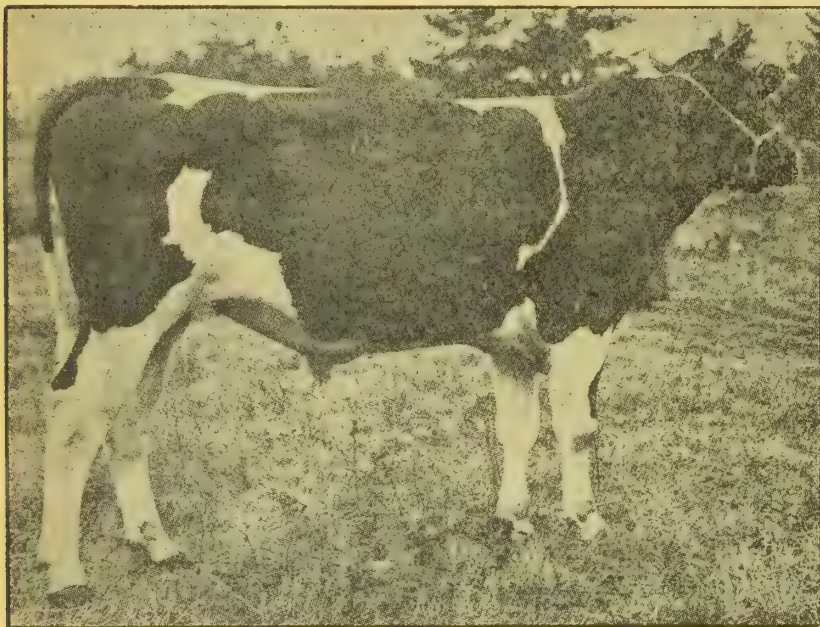
on the "money back if not satisfied" proposition for the breeding, the condition, size and type are all in evidence and nothing is permitted to leave for breeding purposes which would not be good enough to keep; besides the offering prices are very moderate.

Mr. and Mrs. Johnson together with their son and daughter, who, all are interested in the development of this valuable farm with its noted registered Holsteins, make up the ideal home showing a spirit of generous hospitality to the visitor.

### CONDENSED MILK, EVAPORATED MILK, CONCENTRATED MILK.

The Joint Committee on Definitions and Standards of the American Association of Dairy, Food, and Drug Officials, The Association of Official Agricultural Chemists, and the United States Department of Agriculture, on November 20, 1914, adopted the following definition and standard for condensed milk, evaporated milk, concentrated milk, known as Food Inspection Decision 158.

Condensed milk, evaporated milk, concentrated milk, is the product resulting from the evaporation of a considerable portion of the water from



Holstein Bull, Segis Riverside Pontiac, for which Mr. Johnson paid \$1025.

tive records are 30, 32 and 35 lbs. butter with a larger proportionate 30 day record. He has 50 per cent. of the same breeding as King of the Pontiacs.

Another sire now in this herd is Aggie Colantha Pontiac Rag Apple, purchased for a big sum from D. W. Field, Montello, Mass. The averages for his dam at 2 years and his sires dam at 4½ years is butter, 25.55 lbs.; milk, 511.9 lbs.; per cent. fat 3.99. He possesses splendid type.

At the Portland International Stock show last fall Mr. Johnson topped the sale by paying \$1025 for Segis Riverside Pontiac, a bull of famous ancestry (illustrated in this issue) and may be entered in Panama Pacific Exposition show ring.

While Mr. Johnson has not made it a practice to appear at the fairs, he has spared no expense in procuring that which would produce vigor, type and high record of the foremost rank, and his entire herd of cows, young heifers and a bunch of 18 young sires are certainly a uniform lot. He has abundant pasture fields and is a careful feeder. In this case it would hardly be necessary to sell

the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains all tolerances being allowed for, not less than twenty-five and five-tenths per cent. (25.5%) of total solids and not less than seven and eight-tenths per cent. (7.8%) of milk fat.

### LARGE RECORD OF COWS.

#### Effects for Continued Service.

The statement is often heard among dairymen that the big record cows are injured in the making of the record, and that after the record is finished their period of usefulness except for advertising purposes has passed. In order to obtain some definite data on the subject the Guernsey cows which have completed records of over 700 pounds of fat have been studied to determine the effect of the records on the further usefulness of the animal as a factor in eventually producing human food.

There are 63 Guernsey cows who have produced over 700 pounds of fat.

## BETTER CREAM BETTER BUTTER BETTER PRICES

*The Ideal Sanitary Cream Cooler*



Will remove the animal heat from the cream while flowing from the separator, and as well reduce the temperature sufficiently low that it can be at once mixed with older cream and set aside for future delivery without further cooling.

Its cooling capacity is sufficient that where used in connection with the largest hand-power separator, it is capable of reducing the temperature to within three to four degrees of the water used.

It is so constructed that it can be placed under the cream spout of the smallest size separator and still be high enough to deliver by gravity into a 5 or 10-gallon can. Write for Cooler Circular.

Manufactured exclusively by

**DE LAVAL DAIRY SUPPLY CO.**

San Francisco, Cal.  
Ideal Green Feed Silos

Seattle, Wash.  
Alpha Engines

Everything for the Dairy

### COTTONWOOD GROVE STOCK FARM

#### CHOICE HOLSTEINS

Some fine young bulls to offer out of Homestead Jr. De Kol and Butter Boy 3rd breeding, sired by Dutchland Sir Fayne Colanthe, whose dam and sire's dam average 30.76 lbs. butter in 7 days, 122.93 lbs. in 30 days; brother to Grace Fayne 2nd Homestead, former world's champion. His three sisters averaged over 33 tons milk in one year. Health, condition and breeding all guaranteed. Prices reasonable. Please mention this paper when writing.

**ALBERT JOHNSON**  
SCAPPOOSE, OREGON



### FRESH COWS AND REGISTERED BULLS

Buyers are now in evidence for choice young Holstein cows also for Guernseys. During April and May the buying will be more extensive than for several months past. Those who intend to make selections in the near future will do well to write us or call at as early date as possible, for indications are that shipments from the east cannot be made for some time and the fresh cows available in the Northwest are limited.

We have both registered and high grade stock of Holsteins and Guernseys, fresh cows, bulls and calves.

Write today for our descriptive and complete printed list of Holsteins and Guernseys.

## FRYAR & COMPANY

Please Mention  
This Paper

SUMNER, WASH.



**GUERNSEYS** — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.



Of this number 3 have four official records, the first averaging 548 lbs. of fat, the second 567, the third 674, and the fourth 810. One of these cows has produced to date 10 registered calves, 4 of which have been born since making the last record, and she is carrying at the present time her eleventh calf. One of the others lived to be 10 years of age and produced 6 registered calves in that time. The other lived to be 9 years of age and died from blood poison contracted at calving time. Regarding her work the owner said, "She was so delicate looking that I held off breeding her until late, she being 3½ years old before producing her first calf."

There are 22 cows of the 63 that have only one official record and all but 3 of these have produced calves since making their records or are safe in calf.

It may be true that there are isolated cases where the future usefulness may be injured where improper care and feeding has occurred during record work, but we cannot but feel there are very few instances among the heavy producers of Guernseys today where injury has been noted as the result of official testing.

On the other hand the results obtained in cases where cows have made two or more records point conclusively to the fact that advanced register work has been a material aid in the development of the individual animal as well as in the breed in general.

A. G. C. C.

#### HOLSTEIN SALE NOTES.

The sire bought by Mr. A. E. Smith and B. S. Fryar, consigned by Wm. Bishop, will be used this season in the Smith Herd at Sumas, being of same relative breeding. Mr. Smith is planning to keep his herd in line for high record dairy work.

#### Playing Fair.

In making announcements at the beginning of the sale Wm. Bishop stated that instead of consigning some of his best he could have offered others of very good quality but he desired that buyers should realize a proffered opportunity for getting top bred animals at their own prices. Commenting on that remark after-

wards, Mr. D. F. Sexton, of Snohomish, said, "The first time I heard of Wm. Bishop was nearly 30 years ago, when a boy he came over to Snohomish to run a foot race programmed in a 4th of July celebration. Bishop won, and the prize money was handed over. Before leaving he learned of the almost destitute condition of the family of his competitor and at once divided with him the earning most generously. Since then I have been impressed with the broad minded views and the fair play disposition of Mr. Bishop."

Mr. Herman Steffen, Monroe, Wash., was a determined bidder for the sire Chimacum Daniel Boon. Quietly and firmly he bid until reaching the point of \$1030, and it took several moments for him to decide not to go higher.

Messrs. Van Woerden and Fisher were interested visitors, buying several head.

Mr. B. S. Fryar at first a little amused at what seemed an apparent line drawn between breeders and dealers as appeared to him to magnify the merits of the former, concluded that some of the sires of high merit breeding were going at rather low prices, decided to take part in the bidding, and was the first to buy as high as \$750. This set a new pace and several young sires were sold at good prices immediately following.

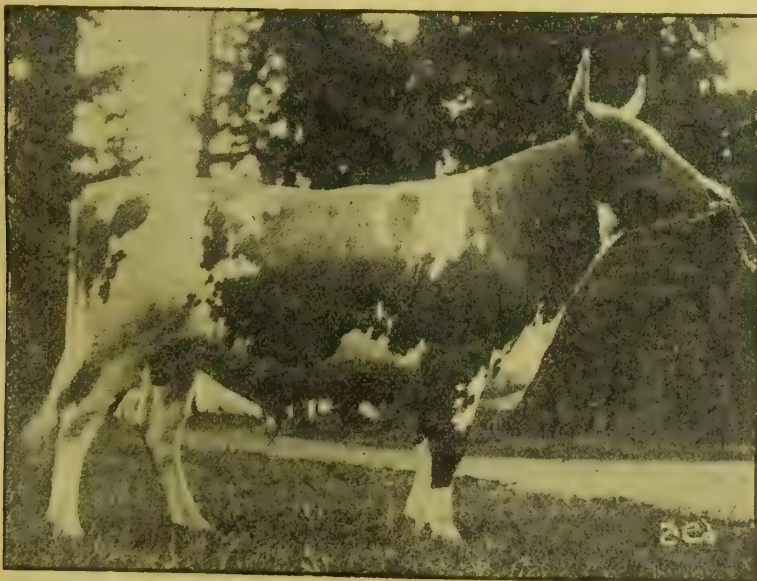
#### SOME DAIRY COW RECORDS.

Mr. John R. Martin, of Satsop, Wash., has some nice young Jersey calves from dams of high authenticated test. The grand dam has a record of 11,689 lbs. milk and 651 lbs. butter in one year, the kind which makes good above cost of feed. Some of his neighbors are figuring on buying youngsters of this class.

Mr. A. G. Willis, of Montesano, has some good Bolton Golden Lad Jerseys which are making a very satisfactory margin of profit. Prospective buyers are looking for announcements of sale offers of this class.

David C. Dilworth, Buckeye, Wash., writes that all his registered cows in milk have qualified for the Register of Merit with very creditable records.

B. S. Hillier, Bellingham, Wash., is breeding up his registered herd with Fanella and Betsy Jewel stock,



Peter Pan 11th, son of Imported Peter Pan, has been sold by Mr. J. W. Clise, proprietor of Willowmoor Farm, and shipped to the State College, Pullman, Wash., to head their Ayrshire herd. Of all the Peter Pan bulls, this is most like his noted sire. The Ayrshire herds of the Agricultural Colleges of Washington, Oregon, California and Hawaii are headed by animals from this farm.

## Registered and High Grade HOLSTEIN CATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

**H. S. ROYCE**

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

#### LA CONNER FLATS STOCK FARM

### REGISTERED HOLSTEIN CATTLE

Our service sire, Segis Pontiac Acme, has dam, grandam and great grandam with average year's A. R. O. records of over 24,000 lbs. milk and 1080 lbs. butter. A few choice young bulls from tested dams.

Also Duroc Swine

J. H. HULBERT, JR.

MT. VERNON, WASH.

## Dairy Supplies

Cream Separators, Anker-Holth unsurpassed, testing outfits, milk-bottles, seal caps, stanchions, churns, everything required to equip a modern dairy farm or creamery.

Remember that quality is strictly our watch-word and our prices are reasonable.

### Poole's Seed & Implement Co.

1507-9 Pacific Ave.

TACOMA, WASH.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

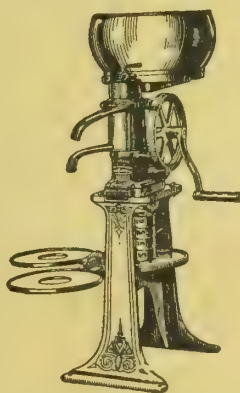
**TURNER & PEASE CO.,**  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.



TWENTY  
FIVE  
DOLLARS  
TO  
YOU

When a man writes and says, "If you have a cream separator with a bowl guaranteed never to get out of balance, I want to see it. I have paid out something like \$90 to have separator bowls repaired and rebalanced since I began using a cream separator," do you wonder he is interested? He also said he had a bill right now for \$17.50 for repairs on bowl. This is only one out of many; there are hundreds who have paid from \$5 to \$25 for this same purpose and a great many of them have paid that amount more than once. THE ANKER-HOLTH HAS A BOWL GUARANTEED NEVER TO GET OUT OF BALANCE.

Now does it or does it not make this machine worth at least \$25 more than any other? And, mind you, this feature is only one of the many superior points in which it excels over any other cream separator. Are you from Missouri? Give us a chance to show you.

**THE J. C. ROBINSON CO.**  
43 First St., Portland, Oregon

### Don't Sell the Young Calf

## BLATCHFORD'S CALF MEAL

Will Raise It Without Milk

There's big money and little trouble for you in raising your calf the Blatchford way. You can save all the milk of the cow for market. As soon as the mother cow's milk is ready to sell, the calf is ready for

**Blatchford's Calf Meal**  
—For over a century the Recognized Milk Food for Calves, at One-Fourth the Cost of Milk  
Composed of eleven different ingredients carefully apportioned and thoroughly cooked, producing a scientifically balanced ration for the young calf. Successfully used on thousands of American farms for over thirty years.

The Only Milk Equal Made in an Exclusive Calf Meal Factory. Unlike any of the So-Called Calf Meals Made of Raw Cereal By-Products.

Blatchford's Pig Meal insures rapid, sturdy growth of young pigs. Write us about it. Write for Free Illustrated Book on "How to Raise Calves Cheaply and Successfully Without Milk."

**Blatchford's Calf Meal Factory**  
7 Madison Street (U) Waukegan, Ill.

**Blatchford's Calf Meal**

Is Sold By

**Poole's Seed & Implement Co.**  
1507 Pacific Ave., Tacoma, Wash.

#### REGISTER OF MERIT JERSEYS

Young bulls for sale from cows with authenticated yearly records; no females for sale at present.

DAVID C. DILWORTH

Buckley, Wash.



bought at a long price from the East some time ago.

Alvin Minor, Lynden, Wash., is a Holstein breeder and dairyman having some very choice stock from the Wm. Bishop herd. He is ready to change sires and some enterprising dairyman in his community has here a rare opportunity to get a herd sire at a bargain.

Van Woerden & Fisher, of Thomas, Wash., sold a carload of high grade Holstein two-year-old heifers recently to a party in Okanogan county at \$150 per head. While this appears to be a good round price for high grade stock, the bunch was a uniform lot in excellent condition, sired by pure-bred bulls backed with excellent records, and in fine shape for a strictly dairy proposition for which purpose the stock was raised and sold.

#### TWO WONDERFUL PRODUCING COWS.

Within the last year two Guernsey cows have gone ahead as champion dairy cows of the world. It is interesting to note the production of these cows and compare it with the production of the ordinary dairy cow of the country.

The milk of May Rilma, who gave 19,673 pounds in a year, sold for 12 cents per quart, which would make a gross income of \$1140. Murne Sowan's 24,008 pounds of milk sold for 10 cents per quart, making the gross income \$1095. This would be 10 per cent on the purchase price of practically \$10,000. This emphasizes most strongly the value of the characteristic of the Guernsey to color her products with that rich golden color, a point to be remembered by Guernsey breeders in their breeding plans.

In the above comparison no account has been taken of the increase in value of the offspring from the exceptional dairy cows over that of the average dairy cow of the United

## Efficiency in Dairy Farming

In an address before the Washington State Dairymen's Association, Mr. C. W. Orton, Sumner, Wash., one of the most successful dairymen in the Pacific Northwest, said in part:

What we want is results and the farmer who works hard year after year and has nothing to show for his work, deserves mighty little credit and no praise for being a hard worker.

Efficiency is not to be measured, however, in accumulations of money and land. Getting the money is merely "cashing in" efficiency at best. As a matter of fact, many money makers and money savers are relatively inefficient in production, in service to their fellow men. In a general way society rewards us proportionately to services rendered to it, but some are better collectors than others and some are so proficient at getting and saving money that they prosper without rendering adequate service. We should consider our subject only in relation to service; to wealth produced and conserved.

I can think of no business in which there is a wider range of efficiency than in dairying. I know of no business in which long hours, drudgery, unsanitary and unpleasant working conditions may bring less in returns; nor in which intelligent effort, skill,

States. It would be impossible to measure this in dollars and cents, but it would be a great factor in favor of the better type of dairy animals.

#### WEST'S JERSEYS.

Mr. Harry West, Scappoose, Oregon, enjoys the reputation of having the only herd of Jerseys on the Pacific Coast which was imported from the British Isle by the owner. He has 85 head among which are some very choice animals and all of the fine Jersey type which signifies economical producers. From his herd numerous selections have been made by dairymen from all parts of the Coast country, but he can yet fill some orders for young stock both heifers and bulls, and is ready to take another trip across the ocean as soon as the war and the quarantine disturbances will permit.

hope, courage and perseverance bring a surer and greater reward—measuring reward in worldly goods, health, happiness, contentment, satisfaction.

I do not pretend that I am trying to impress upon you some thing new. It has been preached upon from one angle or another ever since we can remember, but it has been given to us in fragments. We have been admonished at one time to keep better cows; at another time to systemize our work; again we are urged to study our feeds with the idea of buying or growing those of greatest value for the money or time and labor; and so on to each phase of our calling. What I wish to urge is the consideration of efficiency in its application to all our efforts at all times; to every phase of our business all the time. Get the habit of thinking efficiency; of putting everything to the test of efficiency, and you will not need to have better cows, better feed, better help, better soil, better seed preached to you time after time and, generally, in one ear and out the other.

The habit of thinking efficiency is not narrowing, as some may think, on the contrary it is broadening. It stimulates its possessor to greater effort, to experimentation, to invention. It marshals all his resources to his business and to each problem and task.

## Holsteins of Pontiac and Hengerveld Dekol Breeding



Our consignment of pure-bred cows to the public sale last month brought very satisfactory prices but the value was there and buyers acknowledged the fact by their bids. We can spare a few more fresh cows, quite a number of calves in which there is big money for those who are planning for a valuable future herd and some Registered bulls. These bulls and youngsters are all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

According to the numerous inquiries being received the demand for pure-bred Holsteins is becoming brisk as the pasture season is coming on.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

Some lines of work have a narrowing tendency compared with others, but no matter what the work, an effort to do it more efficiently has a



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**  
Box 34, Milltown, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

**MRS. D. F. ALWARD,**  
Orting, Wash.

### HOLSTEIN SIRES

Some splendid registered bulls for sale out of Lunde Artis, Requisite 3rd and Karel Bos breeding. Write for full particulars as to pedigree and prices which are reasonable.

**CHERRY VALLEY STOCK FARM**  
A. P. Malloy, Prop.  
Monroe, Wash., R. D. 1

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

## Extraordinary Offer

I will sell the increase from my great Register of Merit Jersey cows, sired by the greatest bulls in the West. YOU need this stock to strengthen your herd or as a foundation for great producers. This stuff can win consistently in the show ring with anything in the country. Prices \$100 and up. Special price on small herd, including bull.

For pedigrees and information, write

**E. L. BREWER**  
Satsop, Wash.

### JERSEY BULL CALF

Solid color and splendid individual, born July 10, 1914. Blood of Brown Bessie and Eminent. Price on application.

**JEFFERY HILTON,**  
Marysville, Wash.

## A GUERNSEY BULL

A very fine 2-year-old Guernsey sire is offered for sale. He is sired by Melba's May Prince, out of Imported Chartrouse, with advanced registry test of 10,238 lbs. milk and 525 lbs. butter in one year. This is a rare opportunity to get a young Guernsey bull of this class. The price is reasonable considering ancestral records and the excellent quality of the animal. Write for particulars. **AUGUSTINE & KYER,** First St., Seattle, Wash.

## Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

**A. G. WOODWARD**  
Route 1, Box 12 Fairbanks, Wash.

## FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

**Plateau Farm**

**VASHON, WASH.**  
**S. M. SHIPLEY, Proprietor,**  
Haller Bldg., Seattle.



broadening and enlightening tendency.

For instance, a man who is feeding cows may devise a feed cart that will enable him to do his work in less time. He may experiment with the effect of feeding upon production and study feed values and individual capacities, tastes and temperaments of cows with the idea of getting the greatest profit. This is anything but narrowing. But to feed stock in a perfunctory manner, doing it as he is told and doing it the same way day after day, certainly is narrowing. Some people think a man is narrow-minded when he does some "one thing supremely well and takes little interest in other things; they conclude that his interest in his work is to blame for it. As far as I have observed, the men who are inefficient and lack interest in their work are not usually broad-minded and are not as likely to be interested in other wholesome and enlightening activities as those who are interested in their work. I do not think efficiency is a drawback in this respect.

#### The Farm and Stock.

In applying this subject to dairying, I shall endeavor to outline briefly what seems to me should be the attitude of an efficient mind to several phases of this business. The first thing to consider is the farm. Is it suitable for dairying, both as to location and quality of soil? Effort expended on a poor farm is effort wasted and an efficient man abhors waste of any kind. He will not be content with any certain farm as long as there is a better one available, and having rented or bought a farm he will proceed to improve it as much and as fast as it seems practicable. He will study the soil and the location of fields, buildings and yards with a view to getting as much from the soil as he can, and getting it with the least expenditure of labor. I regard this latter, that is, the planning and arrangement, as a matter of very great importance. It calls for considerable constructive thought, which is hard work for most of us—so hard that very few do much of it. Second-hand thoughts are good for most people, and they adopt them for their very own, but real thinking gives them a headache and most of them keep free from it.

The next problem that confronts our man is the stock. Of course an efficient man will not be content with inefficient cows, and then there are efficient cows and more efficient cows. The limit of cow efficiency has not been set, to say nothing of being reached. To be sure he will have to take what he can get at first; that is, the best he can get, which is usually not very good, but he will begin immediately to breed up and cull out

and perhaps buy a few good ones now and then. When we contemplate the fact that the average production of butter in this country is about 150 pounds per cow, while some herds have averaged more than 500 pounds, we can realize the possibilities in this line.

The man who is not content with poor cows will not be content with poor horses or poor equipment of any kind, and will replace and add to in order to promote efficiency as fast as his means and credit will permit, and let me say here, that the banker usually knows whether a customer is efficient or not. He understands. That's part of his business—and then the poor manager wonders why his neighbor with less tangible assets can borrow money more readily than he himself can.

#### Crop and Feed and Labor.

In the matter of crops, of course, the most important thing for the dairyman is to grow feed for his stock. Here is a large field for study and experiment. He must find out what feeds are most suitable for his stock and which of these are most suitable for his soil and climate. He will never be satisfied but always looking for something better. One of the distinguishing characteristics of our efficient man is a wholesome discontent—he is never satisfied.

Perhaps he will find it more profitable to buy a portion of his feed, possibly nearly all of it. In this event he may find it more profitable to grow some money crops to get the greatest benefit from his land and from the manure. Up to a certain point it pays to put more manure upon a given acre, and then the law of diminishing returns starts to work and the more you put on the less the net returns. In my case I have found it more profitable to buy all my grain and hay and even some succulent feed and devote part of my farm to money crops.

Another important matter and one which our efficient man will not overlook, is that of labor, whether he does it all himself or hires it done. A man can manage himself or he can manage a crew of men in such a manner as to get a great deal more out of the same expenditure of energy than an ordinary man will. You have all seen men who have done their work with so few unnecessary motions that it looked easy. You have seen men who made every move count; men who planned their work ahead and didn't have to stop to think or be told what to do next. Such a man of only moderate physical strength will accomplish more than some blundering, awkward Samson who has no idea of efficiency.

## STOCK

### Pigs the First Eight Weeks

By Jno. B. Peterson, Montborne, Wn.

The care of the pig during the first three months of its life is of the greatest importance. It has been stated by different authorities that 25 per cent. of all the pigs farrowed die before they are six weeks of age. I must say at least 20 per cent. of this loss is due to improper care: first, by not providing proper place in which to farrow; second, by not attending to

the sow during farrowing, and third, by not giving the proper feed to the sow.

#### The Brood Sow Quarters.

The care, management and cost of raising the pigs until they are from six to eight weeks of age is very important.

The sow should be placed in a separate pen at least ten feet wide and twelve feet long, all under cover and

### HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. DE KALB

De Kalb, Iowa

**WANTED**—Two or three pairs of young Angora Goats, from 3 to 6 months old. Price must be reasonable. NEUCHATEL NURSERIES, Burlington, Cal.

### For Sale Duroc Hogs

Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.

H. A. SIMONDS  
Bothell, Wash.

### O.I.C. Hogs

#### English Shire Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

### HAMPSHIRE Hogs

Choice young stock of good breeding for sale at all times. Write for particulars.

HIGHLAND  
FARM CO.  
Underwood, Wash.



America's  
Pioneer  
Dog Remedies

### BOOK ON DOG DISEASES

#### And How to Feed

Mailed free to any address by the Author  
H. CLAY GLOVER, V. S.  
118 West 31st Street, New York

having a two-inch board floor with concrete underneath the floor. If you cannot afford a concrete base, a board floor alone will be sufficient if drafts or cold air cannot circulate too freely under the floor. With this ample room there will be less danger of her stepping on her pigs, and she will also keep her bedding cleaner. No direct draft should circulate through the pen. It is due to this cause that a large number of pigs die of pneumonia.

The sow should be placed in the pen at least one week before farrowing, and at farrowing time one must see that the pigs do not become chilled and that they receive sufficient nourishment. Dry bedding should replace the old bedding soon after farrowing, using only a small amount the first six days. The pens are to be cleaned every day and new bedding put in every other day regardless of whether the other bedding is soiled or not, as it becomes foul and is more apt to breed disease germs than fresh bedding. A good dairy farmer would not neglect to clean his cow barn out every morning and night, but his hog pen may be neglected for six weeks, its needed attention not entering his mind. Pigs cannot thrive best under above outlined conditions. My opinion is that if a man will clean out the sow's pen every morning that he will also give her and the pigs the proper feed and care.

#### Proper Feeding.

The sow should be well fed and in good flesh, but not too fat, at farrowing. The first twelve hours after farrowing she should have nothing but clear water heated to a temperature of about 85 deg. F. The next twelve hours she should have water at the

### Berkshire Hogs

#### ANY AGE

Do you want some prolific money-making Berkshires? Then make application as early as possible. Prices very reasonable.

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Box 62, East Stanwood, Wash.

### "B. K. M. BERKSHIRES"

Bred Gilts, Sows and Boars for sale  
Good pigs \$10.00 to \$15.00 each.

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Lacey, Thurston Co., Washington

### Electric Light Farm

### A. J. C. C. Jerseys

#### FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

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A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

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**FOR SALE**—Pedigreed O. I. C. Hogs \$15 each. Wild and Bronze Turkeys, eggs 25c and 35c. Pure bred White Leghorns eggs 15 for \$1.00, 100 for \$4.50. E. Y. SANDERS, Roy, Wash.

#### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

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Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

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North Yakima, Wash.

**FOR SALE**—Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. GEO. W. HAYTON, Mt. Vernon, Wash. R. 3, Box 73.

### Marrow Cabbage

Those who tried it the last two years are ordering more seed. Don't delay but send at once any amount from 25 cts. to \$1. for a generous quantity.

Descriptive Circular Free.

E. E. MARTIN, Bangor, Wash.

#### GOOD REGISTERED BERKSHIRES

Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.



same temperature with about one-third skim milk mixed. Then gradually increase her feed with a little bran and shorts, and at the end of the week she can be put on full feed, consisting of shorts, middlings and oil meal or tankage. The light feed at first serves to prevent milk fever and scours from the pigs. You must study the capacity of each sow, the same as you would of a cow, being careful not to overfeed or to get her off her feed. As a rule I find more farmers who underfeed than overfeed. The pigs of the underfed sow will not be as thrifty or as large as those of the sow which has received the right amount and kind of feed. If the sow is overfed it may cause scours in the pigs, although the scours may also result from other causes. There should be no feed left in the trough an hour or so previous to each feeding.

#### The Cost.

It costs me at the rate of two cents a day for each pig until they are six weeks of age, or seventy-two cents for each pig at that age, the litter averaging twenty-one and three-fourths pounds. I feed in the proportion of one pound of oilmeal and four pounds of middlings to six pounds of "ninety-lb." shorts. I do not mean re-ground bran. These figures are taken this spring when shorts are worth \$36 a ton, middlings \$42 and oilmeal \$40 a ton. The next two weeks, or from six to eight weeks of age, the cost is three cents a day, making a cost of 96 cents for each pig at weaning time, they weighing at that time 35 to 40 pounds. This amount includes the cost of the maintenance of the sows.

While I raise the pedigreed Duroc Jersey hogs, there are other breeds of hogs that are probably just as good. It is according to one's likes and dislikes and the strain of hogs he has

and the care he gives them which will net him a greater or less income.

If one sells the pigs at weaning time at the price I receive for my barrows (which is \$5 apiece) he will make more money from one brood sow in a year's time than can be made from two \$125 milk cows, with one-sixth of the money invested.

#### CASCADE INTERNATIONAL STOCK SHOW.

At the show to be held at North Yakima, November 22-27, there is to be a very fine wool exhibit. Through the courtesy of Mr. Alexander Livingston, who represents the American Woolen Company, of Boston, probably the largest concern of its kind in the world, his company will make an exhibit at the big show in November for comparative study of Washington, general American and Australian fleeces, talps and yarns. This, with other wool exhibits which may be procured, will be only one of the many new features at the Cascade Show, which will be of great educational value to the sheep men, and of interest to others who will visit the show. Every member of the show will appreciate this generous offer of Mr. Livingston's company.

#### FEEDING THE BROOD SOW TO ADVANTAGE.

Healthy, strong, vigorous litters of good size can not be produced unless farmers feed more protein and mineral nutrients than are present in barley, wheat and corn. Protein is the flesh and muscle forming constituent of a ration, while mineral matter goes to make bone. Practical hog-men have long since realized that tankage and skim milk supply protein to splendid advantage, and at the same time, furnish sufficient mineral matter.

## Dairy Stock Market at "Meadows"

A regular public market day for those who wish to sell and others who wish to buy dairy cattle is a system in successful operation in each of several European countries. Mr. John F. Janssen, believing the same plan of operation would be helpful to both the buyer and seller has leased "The Meadows," consisting of about 100 acres of level land for such enterprise. This was formerly used for fair and speed purposes, is well enclosed, has 20 buildings to accommodate a large amount of stock and affords considerable pasture. It is located on the Interurban, about 20 minutes ride from the center of Seattle, and has spurs leading into the yards for switching purposes, from the various railway companies.

It is an ideal place for the market day plan, and Mr. Janssen is now negotiating for stock rates from distant points with a view of establishing a regular market day once a month beginning about the first Tuesday in May. Speaking of this matter, Mr. Janssen said, I will have, of course, a fine selection of good dairy stock, pure-bred and high-grade, on hand at all times. The easy access to the place, its railroad facilities right on the place, should make it an ideal point for buyer and seller to meet. I am trying to introduce a new system for this country which

has proven successful in many European districts

The monthly market day will be held each month. Any one who has stock to sell can bring it or have it sent, exhibited, and sold either by private sale through us as commissioners, or at auction at his option. I know, from my own experience, how hard it sometimes is for a farmer to sell his surplus stock in his own community. The market day will be well advertised, and those who are contemplating buying will come to such a place and make their selections. In this way, lots of time and traveling expenses are saved. A market of this kind will be a stimulant to the dairy business of the Northwest.

Mr. Janssen has a large Holstein herd both registered and high-grade stock of excellent dairy type sired by bulls of noted dairy records, which are now at the meadows. Recently one carload of fresh Holstein cows was sold to Gerhard Weeda, of Stanwood, Wash.

**ROCKS, BARRED AND WHITE FLY-MOUTH — ANCONAS — Cockerels for sale; also eggs, \$1.50 per 100; \$4 per 50, and \$7.50 per 100. High fertility, stock first class, price reasonable. Montesano Poultry Farm, John Kahle, Prop., Montesano, Wash.**

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### THE WALDWICK HATCHERY AND MANUFACTURING PLANT.

About 9 years ago Mr. and Mrs. Capt. A. Waldwick started a chick hatchery plant on the dry prairie about 4 miles south of Tacoma city limits, on the Spanaway street car line. Viewed from outside appearance the outlook was not very encouraging, but there was determination, thoroughness and untiring efforts as foundation for a flourishing establishment. Considering the limited available funds at the start, the few mistakes which have been made and the successful plant now in operation what has been accomplished is little less than remarkable.

The Captain personally erected most of his buildings beginning with a few colony houses and a moderate

dwelling. The next step was to manufacture incubators of 900 egg capacity for his own use. To do this it was necessary to understand every principle involved in incubation and with the manufacture of these as well as with brooders which he also made, every detail was carefully planned before beginning each piece of work.

The Hogan system of selection for best laying was also closely observed, and after the first couple of years when careful culling was undertaken, none but heavy layers were kept. Each of the many laying pens have about 200 layers and their records are proof of high quality without resorting to forced feeding rations. The purchase and the mixing of the feed is given very careful attention. Sometimes a little more of one grain

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Hen hatched, strong vigorous stock. Let us make you prices on eggs in single settings or in quantity. Ask for circular.

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Another great shipment of Fruit and Berry Sugar for our customers at less than wholesale! Lowest price in the West. Order now—100 lb sack **\$6.20**

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may be substituted for another, according to market price, but the essential elements are present in proper proportion.

One of the important principles underlying the success of Capt. Waldwick is to figure accurately the cost of production.

The whole place is virtually a manufacturing plant. Lumber, shingles, water-pipes, paper roofing, lamps and feed have been hauled out, and the finished product, which the Captain delivers to the express office, is day-old chicks. There are frequent trips with his auto, generally at least twice a week, with 1500 lively youngsters ready for a train ride some of them to Montana and other distant points. At 10 to 12 cents for each chick the



Captain and Mrs. Waldwick.

reader can easily figure the value. Because of very skilled work and well laid plans the actual cost of production is less than poultry raisers generally figure, but properly considered it is thoroughness and thrift well rewarded.

A feature which pleases the Captain is to keep in touch with old patrons as their flocks may require replenishing, some of whom began ordering eight years ago. Several of the large egg producing plants in the Northwest have each had orders of

5000 chicks filled year after year, strong evidence indicating satisfaction.

The total hatch this season is the largest in the history of the plant, and present indications are that the season's output will reach considerably above the sixty-five thousand mark of last year.

A building has been erected the past year which will contain a refrigerating plant, the ammonia compressor system being installed at a cost of about \$1,000. This will store about 500 cases of eggs for from 3 to 6 months or while markets are depressed. The Captain has figured that he can keep cold storage eggs at a cost not to exceed 1 cent per dozen. This is a pointer for the various poultry associations large enough to handle at least 500 cases of eggs. There are numerous localities where poultrymen in connection with creamery associations could put in a small refrigerating plant of this kind and store butter and eggs at a minimum cost.

The manufacture of incubators both the hot water and the hot air systems; also heated brooders will be undertaken for the trade next year. The aim is a complete manufacturing plant of everything in the poultry line from the raw material to eggs—day old chicks, machinery for hatching and brooding of such class and grade as will afford the same measure of success to others as experienced by the owner for himself.

Here is a valuable lesson for other poultry farmers and for dairymen of the Northwest to employ on their places factory methods. Too many dairy farmers are hauling out mill feeds when the load from town to their farms should consist of silos, stump pullers and shingles, and the product returned should be in the highest finished form possible.

Captain Waldwick's demonstration is a valuable lesson to many of our readers.

### THE SHOUP'S HENERY.

Mr. and Mrs. Geo. R. Shoup of Laurel, Whatcom County, Washington, have developed a large and profitable egg laying and breeding plant.

By careful selection, breeding and close attention to feeding, they have reared several large flocks of white Leghorns which produce from 250 to 300 eggs each a year.

The average of 39 hens by actual count of eggs laid in their pullet year was 266.6 each. A large part of the feed ration is germinated oats, sprouted three to four days in a home made automatic stirring and sprinkling oat sprouter. The most palatable stage of the sprouted oats, says Mr. Shoup, is just before the sprouts shoot through the hull and one day after the rootlets have formed at the large end. On oat sprouter device has been made with stationary compartments one above another, which have sliding bottoms. The soaked oats are poured in at the top and the germinated article is drawn off into empty egg cases at the bottom; and the amount necessary for 2000 birds each day does not require a great amount of labor. The oats are fed in the morning at 6:30 a. m. in the litter, being the only grain until evening when wheat and other dry grain mixtures are given.

In the winter-time 300 candle power lights are used to afford a 14 hour day for feeding and egg laying.

Moistened lumpy mash—two parts bran, by measure, one part corn meal, one part wheat middlings and one part soy bean, seasoned with salt, and with a bucket of coarse sand for every sack of bran used is fed at 5 p. m.

In the hoppers dry bran only is used. The reason is that chickens like it better than the balanced mash, and will eat more of it, second, it contains more mineral and vegetable matter essential to egg production than any other form of grain, third, it is a wonderful absorbent of gases

and furnishes the bulky, coarse food so essential to this plan of feeding. The egg laying campaign is based on a food formula of bulky, quickly digested food in the morning and concentrated heavy food at night.

The plant on this noted egg farm is arranged with a trolley egg carrier, large enough to hold two thirty dozen cases and a bucket for those in any way soiled. There are 150 trap nests. The eggs are sorted for size and packed as they are taken from the traps. Tending traps is a strenuous but interesting job, says the owner, but serves well to get a good foundation of heavy layers. An interesting booklet has been issued and is sent on application to Geo. R. Shoup, Route 2, Lynden, Wash.

### HAS BRIGHT OUTLOOK.

The overwhelming demand for the Anker-Holth cream separator this spring augurs extreme prosperity for this local manufacturing plant. An increased production schedule is now in force and overtime is required in all departments to keep pace with the orders that keep coming in for immediate shipment. One of the largest single orders for 1915 delivery was received on Wednesday from Don Redman, Marlette, one of the largest dealers in Sanilac county, who placed his order for 150 Anker-Holth separators, 56 of these having been sold to customers in the vicinity of Marlette for present delivery. This is a fine compliment to the popularity of the Anker-Holth, as Sanilac county is considered one of the greatest dairy sections of the United States.

The above is a clipping from a Port Huron Mich., paper where the Anker-Holth cream separators are manufactured.

The J. C. Robinson Co., of Portland, Ore., handle the Northwest and buy these machines in carload lots. They report their February business double what they expected and that March is doing still better and they attribute their sales to the unparalleled improvements in this machine. Every user is a booster, they like it so well.

### CHOICE RED CLOVER

Some fine seed at \$17 per 100 lbs.  
Aabling-Ebright Seed Co.,  
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Feeding Mash at one of ten layinghouses of Shoup's Henery, Laurel, Wash.



## How Can I Make Poultry Pay With Present Prices of Feed?

I receive hundreds of letters asking me that question. If you will send me your name and address, plainly written, I will reply by giving information to answer free of cost.

**Walter Hogan**

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Author "Call of the Hen."

Please mention this paper.



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- 3rd EASY TO FEED—keeps indefinitely and is always available.
- 4th SUCCULENT—displaces silage or can be fed with it if desired.
- 5th CHEAPER THAN BRAN—or other mill feeds and gives better results.

**Now** is the logical time for you to start feeding this wonderfully efficient vegetable feed. No matter what ration you are now using, Larrowe's Dried Beet Pulp can be added to it profitably. Order one sack from your feed dealer and test it on one cow whose milk record you know.



—can be had either plain or with molasses. Comes packed in convenient 100-lb. sacks—each pound swelling to six times its natural bulk when moistened. A splendid feed not only for dairy cows, but also for horses, hogs, sheep, etc.

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From the Oak Heights Strain S. C. White Leghorns. You will get strong, hardy chicks that are properly hatched from bred-to-lay stock, that have made the Oak Heights Poultry Farm the largest Leghorn breeding establishment in the Northwest. A few dollars invested now will multiply again and again in the next few years. The price is only \$10.00 per 100. In lots of 1000 or over \$9.50 per 100. Safe arrival to you guaranteed.

Our Leghorns are superior as evidenced by those who continue to place orders. Leading egg farmers are supplied from Oak Heights Poultry Farm.

Here is what some of our customers say:

The pullets from eggs gotten from you are wonders for layers.—HENRY STRUVE, Pendleton, Oregon.

I have 340 pullets from chicks you sent last spring and they are making me about \$2 per day now above feed. They would do better if I had more green stuff for them. The chicks you sent me were fine. I lost very few.—J. W. PER-RINE, Oak Harbor, Wash., Feb. 1, 1915.

Our pullets have done very well this winter and are beauties.—D. ROGERS, R. 1, Spokane, Feb. 3, 1915.

The chicks I got from you have given splendid satisfaction. They have made a record of winter laying that is better than any other flock in this section. In spite of the high cost of grain we can make them pay well.—R. E. BLACK-MAN, Milton, Oregon, Feb. 1, 1915.

The pullets from chicks you sent last spring are doing very well and commenced laying at 4½ months old.—W. L. IRBY, Wenatchee, Wash., Jan. 24, 1915.

**FREE BOOK** on "Feeding and Care of Chickens" sent with every order. A copy of my Catalog will be sent you if you will send your name and address to the

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Are now in use at the Western Washington Experiment Station, Puyallup, and at the Pierce County Farm, Sumner, Wash. Public institutions like these always buy the best. Many of our successful dairymen have followed their example. Why not you? Write for Catalog, testimonials and price list today.

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Twenty-eighth Year

TACOMA AND SEATTLE, WASH.,

MAY, 1915

No. 5

## BUTTER MAKERS

### OPPORTUNITY.

The condenser milk market is down because of an over supplied market. General business depression, inactivity of the various industries and decreased purchasing capacity on the part of the masses are some of the general causes. The butter fat market has descended, as usual, to the storage figure.

Just now is the butter makers opportunity. The country creameryman can effectively persuade his patrons to observe the best of care in the handling of the milk and cream. He is in position to adopt definite, reasonable rules and regulations to be mutually agreed upon by the creamery and its patrons. Where available the county agent, or some deputy dairy inspector, should be pressed into service to help procure signed up agreements for co-operation between the creamery and the patron along this line as far as may be practical. This move is timely just now during depressed condensary markets when attention is naturally turned to butter making. It is to the mutual interest of the dairymen as well that this step should be taken. When a community of farmers organized into a creamery association, either co-operative, under private ownership or semi-private, can put up a butter scoring above 90 or close to the 95 mark, then it can readily be put into cold storage and the operators may realize on its warehouse receipts to very nearly its full present market value, because there is no question but that the October-November market will command some advance over June prices.

The city creameries are getting a very generous supply of cream earlier than usual this season and naturally they fix prices accordingly to the volume offered. If that cream market does not satisfy, then it is up to the dairymen to rally his country creamery or to make a first class butter himself and then store.

There is no magic nor profound secret about cold storage, but a high quality is the first consideration whether the butter is privately made or by means of the cooperative creamery. The butter maker is now in position to command. Will he by common sense methods improve his opportunity?

## ADVERTISING AND SELLING.

The breeders of Holstein cattle have reaped good results from advertising and in the sale of their stock during the past few years. They have worked harmoniously together, have produced quality stock and last, but not least, have used printers ink liberally to tell farmers of the merits of the breed and of the

high record attainments of individuals.

The public sale of Jerseys at Spokane, recently, was rather a disappointment considering the good quality of the animals offered and the opportune season for an increase in economical butter producing cows.

The Jersey breeders need to do more boosting for this noble breed. Many farmers are not aware of the efforts being made to produce larger type animals without detracting from economic production. Let that fact and many others be made known concertedly, then advertise as individuals. Let prospective dairymen know that Jerseys are profit makers. Lose no opportunity to make every good quality of the breed known and then selling will be accomplished with a greater measure of satisfaction.

6 hours for 365 days by the same milker, fed and cared for by the same person, Joseph Basseller, whose long experience as a feeder and fitter of dairy cows has undoubtedly played no small part in the wonderful performance of this great cow.

On her sires side the grand sire is King Fayne Segis and the great grand sire King Segis. On her dam's side the grand sire is Von Holigen Finderne and great grand sire Count Finderne Netherlands. Her dam is a 37.34 lb. cow.

The Supt. of Advanced Registry Malcon H. Gardner, states that during the year's test Finderne Holigen Fayne is said to have increased in weight 250 lbs., now weighing about 1450 lbs.



Holstein cow Finderne Holigen Fayne, World's Dairy Queen.

## WORLD'S DAIRY QUEEN.

Finderne Holigen Fagne, a four-year Holstein cow owned by the Somerset Holstein Breeders Company, Somerville, N. J., has surpassed all butter fat records making her the present dairy queen of the world. Her year's product was 24,612.8 lbs. milk containing 1116.05 lbs. fat, equivalent to 1395.06 lbs. butter.

Her sire is King Hengerveld Aggie Fagne, 56635, and her dame is Mutual Holigen Fayne, 111804.

She was milked four times each day for the whole year, that is every

## OUTLOOK FOR DAIRYING.

Many of our wide awake dairymen are solving the market problem without difficulty, but they are mostly of the class which plan for several years in advance and they continue with the industry. Butter can be made cheaper now than from stored feed. Being provided with butter making appliances they aim to make a high scoring article when the condensary milk market is not satisfactory, and if the present butter market is not attractive their first class butter is put into cold storage. They find little

or no difficulty to have a high quality golden butter transformed into credit—the equivalent of another form of gold. In fact, dairymen who are known to have good workable plans and who continue with the industry rarely need to search for credit accommodations, for financial investors are constantly seeking such opportunities as are considered safe.

On the other hand dairymen in the work as a side line or as make-shift to some other kind of occupation, or those without any definite plan of operation may find serious difficulty during the present season of depressed markets. An experience of this kind while seemingly a hard taskmaster, may be an eye opener and cause dairymen of this class to see how much more easily improvement can be made to their own financial interest than had previously appeared. Good cows are like good fools, the best being none too good, but some times ordinary tools can be sharpened and put into good trim for very efficient service. Give your cows every chance known to good dairying before discarding them, test and cooperate with those in the community who are progressive. The market prices for dairy products does not vary so much, when averaged for a number of years as sometimes appears under depressed conditions.

The outlook for profitable dairying is very encouraging.

## COTTON SEED MEAL FOR FEEDERS.

In a new publication of the United States Department of Agriculture, Farmers' Bulletin 655, "Cottonseed Meal for Feeding Beef Cattle," 1 lb. of cottonseed meal is said to be usually worth as much as 2 lbs. of corn for feeding cattle. There is, however, a distinct limit to the quantity of the meal that animals can use economically.

It has a slightly greater feeding value than linseed oil meal and the farmer is therefore recommended to secure prices on both and to use the one which happens to be the cheaper at the time. During the past winter cottonseed meal sold for \$24 to \$28 a ton while linseed oil meal cost about \$38 a ton. Under such conditions the feeder using cottonseed meal had a great advantage over the farmer using linseed oil meal.

Experiments have shown that when the ration is kept below 7 lbs. a day, steers can be fed for 100 to 120 days upon it without showing ill effects. If silage is given at the same time, as roughage, the feeding of cottonseed meal can be prolonged beyond this time with safety.



Some Model Dairy Buildings at Greenbank.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.  
Address all Communications to the  
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## STICK TO YOUR HOGS.

In any specialty of farming those who make the satisfactory margin of profit during a course of years stick to the product of their choice. This is true of hog raising as with anything else. Last spring quite a number of our readers got "cold feet" because prices of grain kept soaring and hog prices consequently declined.

It is a matter of history, says E. F. Rinehart in the Weekly Bulletin, that the man who makes money out of hogs is the one who follows the business conservatively and constantly. When the market is high he has hogs to sell at a large profit. When the market is low his profits are small, but, in the long run, his average is very good. This man never plunges; his farm is never overstocked or understocked with hogs, and he is the man who will tell of the profits of swine growing.

A study of the price of grain and hogs shows that at a period when grain goes up it is only a short time until the price of hogs follow. Often, however, as is the case to-day, when the price of grain starts up, the price of hogs start downward and remains low until the unloading process is over.

An Idaho stockman of great reputation, one who has followed the game successfully for many years, recently bought between 2,000 and 3,000 shoats that had been unloaded on the market. On the Twin Falls tract he is now feeding them alfalfa hay, cooked potatoes, and corn purchased at \$1.65 per hundred-weight.

The quality of breeding herds as well as the care and management have never been as important as to-day. Just as our dairy stock must improve on high-priced land, so must the quality of our hogs improve as the prices of grain go up. The man who will make a profit on hogs from year to year is the one who is interested in the work and finds time to give his hogs special care.

Now is a good time to get rid of the inferior animals in the herd. Good breeding stock can be purchased cheaper than at any other time. A

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

good pure-bred boar is the only kind that can be guaranteed profitable. When prices are low no one can afford to raise and feed poor stock.

In the feed of the hogs alfalfa hay can be made the basis of the ration. Roots should be fed constantly. Middlings or shorts is one of the best of feeds for brood sows and growing pigs. Fortunate, indeed, is the man who has skim milk. On farms where there is no skim milk, when the present prices prevail, tankage is one of the cheapest feeds.

## MARKETING BUREAU.

Pressure is being brought to bear on the U. S. Department of Agriculture for the establishment of a Bureau of Markets. Producers and consumers all over the land realize the urgent need of such head. This does not signify elimination of necessary middle men, but they are agreed with producers and consumers that a more definite basis for operation than now exists is essential for all parties concerned.

## RURAL CREDIT.

The rural credit question from a local standpoint hinges upon efficiency and productive capacity. In a community the same principles must prevail in some concerted manner to attract capital. The integrity of the individual must ultimately compose the unit guaranty.

## CIVIL SERVICE EXAMINATION.

On June 8, the U. S. Civil Service Commission will hold open competitive examinations for physiologist, men only. Salary ranges from \$2500 to \$3000 per year, also for mycologist in fermentative investigation, for men only. Salary \$1800 per year. On same date for agriculturist, irrigated field crops, men only. Salary \$1800 to \$2500 per year. Full particulars and blanks may be obtained by addressing the Civil Service Commission, Seattle, Wash.

## BOVINE TUBERCULOSIS.

The bovine tubercular scare like a good crop of measles is running its course just now in this State. It is causing some discomfort, and awfully hard on some dairymen whose cows are caught as reactors. Some of these animals ought to be slaughtered but many of them might as well be isolated and the milk sterilized without the notoriety which is ruination to some of the leading dairy farmers. In Pierce County a Tacoma City ordinance prohibited the sale of milk other than that from tuberculin tested cows. Some of the dairy herd owners whose places were kept in first class order then withdrew from the milk supply business and sold cream and butter rather than to have their cattle subjected to the tuberculin treatment. They expressed the opinion that any latent bacilli in the animal, as in the human, might become active under feverish condition and they insist on the same common sense method of handling the bovine tuberculin malady as is now the practice in Holland, Denmark and other European countries. When the cows there show any sign of disease they are isolated and treated accordingly as their condition demands.

It is essential to be safe but extreme impractical methods rather

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

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N. P. Wharf, Tacoma, Wash.

hinders than helps the end sought to be accomplished. After the people in this state find, as they have in Wisconsin, Illinois, New York, and in dairy districts of Europe that common sense, sanitary methods rather than radical measures are the best means of control, then the present measly craze to inject tuberculin into every cow in sight will have subsided.

The popular Strawberry Festival of Vashon Island will be held this season about June 19, at Burton. This annual event affords an occasion for the people of the Island to impress upon their city cousins the good will, the social and hospitable spirit which exist on this famous beauty spot of Puget Sound.

W. H. Paulhamus is working heroically to get enough apple growers to sign up for the plan to retain control of their own crops pending satisfactory conditions of sale. That step is very necessary in order to carry out the Growers' Council mode of operation. Producers have every chance of gain and nothing to lose by getting together for the purpose of holding title to their productions until sold to the best advantage possible.

## COST OF PRODUCING APPLES

By E. F. Stephens, Nampa, Idaho.

We finished our calyx spray May 8th on three hundred acres of bearing orchard. Outlook for fruit of all kinds very favorable.

From 1871 until 1911-12 I was engaged in the nursery work at Crete, Nebraska, forty years. There I studied economics of production of nursery stock. By keeping book accounts of all work applied to each plat, handled under varying method and by developing machinery adapted to the work, I was able to reduce the cost of growing forest seedlings from 60c to 20c per thousand trees.

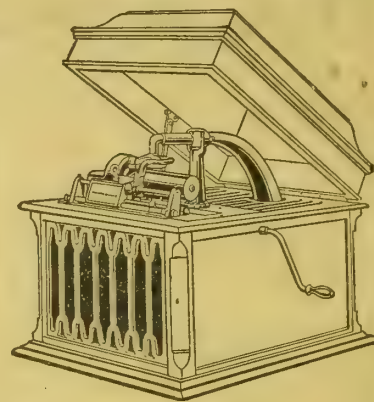
Raw prairie sod was broken and prepared and developed into a good seed bed at a cost of \$11 per acre. In the growing of ash seedlings for which there is a great demand in timber claim work, I planted 20 bushels of seed per acre in drills 22 inches apart. Frequent cultivation developed plant food and conserved moisture. In late October these trees were cut under by the tree digger, pulled, graded, counted, tied in bunches of 100 each and heeled in on the yard at a cost of 20c per thousand trees, fifty trees for a cent. I grew thirteen million trees in one season and purchased five million more to supply my trade for the season.

This results was secured by the elimination of lost motion and by such methods of preparation and tillage as allowed to grow two hundred thousand merchantable plants per acre.

Applied to Fruit Growing.

In Idaho in the growing of commercial apples it is of supreme im-

## THE EDISON Diamond Point PHONOGRAPH \$60.00



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The Diamond Point Phonograph reproduces any selection in the clearest tones ever heard from a talking machine; plays four minutes. Blue Amberol indestructible records. This machine is equipped with powerful spring motor, speed regulator, Diamond Point reproducer, mahogany cabinet. Absolutely guaranteed against mechanical imperfections.

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portance that we should handle our work in up to date ways, eliminate all waste and lost motion; use up-to-date machinery and appliances; endeavor to grow apples at a cost not to exceed ten cents per bushel; to pick the apples from the trees, haul them to the packing house, run them through automatic sizers or graders, and place them on car at a cost of not to exceed 25c or a total of 35c per box cost on car in readiness to ship.

Fruit run over a sizer and grader of the new type used by the Manville Fruit Co. can be automatically placed in boxes and with a little additional labor made ready for the nailer with a minimum amount of hand labor. A comparison of returns received for the crop of 1914 indicates that those who placed their fruit on car with the least initial expense in very many cases, received the largest net returns. A goodly proportion of the consumers of apples in the United States hesitate to consume apples freely unless they can purchase them at a \$1.25 per bushel or less. There is a limit to the demand for extra select fruit at a \$1.50 to \$2.00 per box. It is legitimate to paper wrap the apple for the extra fancy class of trade. Eighty per cent. of the people of the United States, however, are more strongly influenced by a moderate price than by extra fancy quality and pack.

To successfully grow merchantable apples at a cost of ten cents per bushel or less we should in our young orchards plant more than 48 trees per acre.

Forty-two years ago I planted a large commercial orchard in Nebraska with the trees 12½x25. Those trees fruited until fourteen to fifteen years of age before it was necessary to



remove every other tree. Later I planted fifty thousand fruit trees in partnership commercial orchards, planting trees fourteen by twenty-eight feet. These trees fruited successfully fifteen years before requiring removal of alternate trees. Commencing to plant orchards in Idaho, the first few acres in 1908, the major portion of our plant in 1910, we increased the distance in the row to sixteen feet, planting 16 by 28. In the fertile soils and favorable climate of southern Idaho we plan to allow every other tree to stand 12 to 14 years. The removable trees will be pruned fanshaped and not allowed to interfere with the perfect development of the permanent trees. Handled in this way good judges estimate that some portions of our seven year old orchard will this season yield 700 bushels per acre and certain portions of our five year old orchard are estimated to yield 200 to 300 bushels per acre. Increasing at the age of ten years in favorable seasons, to 1000 bushels per acre. In 1910, B. F. Tussing, of Fruitland, Idaho, from an orchard making its thirteenth season's growth, packed 1209 boxes per acre. These apples were grown at a cost of 6c per bushel or \$72.54 per acre. This cost price covered pruning, spraying, cultivation, irrigation, maintenance of fence, and taxes. In 1912 R. H. Woods, from trees planted 80 in, number per acre, an orchard making the tenth season's growth, packed of fancy and extra fancy grades, 1295 boxes per acre.

E. F. STEPHENS,  
Nampa, Idaho.

#### OFFICIAL SUPERVISION IN PACKING AT WENATCHEE.

Fruit inspection this season will be under the direct supervision of O. T. Clawson, his services being paid for jointly by the state and by the Growers' League, he being at all times, however, under the control of the governing body of the Growers' League.

While in Spokane recently President Adams of the league had a conference with T. O. Morison, state horticulturist, and an agreement was reached for the services of Mr. Clawson. Under the new horticultural code provision for fruit inspection is made. One of the cardinal principles also of the Growers' League is a strict inspection of grade and pack, and it was thought a waste of effort for the state and also for the league to separately inspect all fruit shipped out of the valley. In consequence Mr. Morrison readily agreed to the Growers' League taking charge of the inspection and having the work directed by Mr.

Clawson.

"This inspection will have the authority of the state and also of the Growers' League," said President Adams, "and will be very rigid. I suggest that all inspectors who desire to work under Mr. Clawson should report at once so that he may arrange for a number of inspectors for work later in the season. It is likely it will be necessary to bring in a few outside men for this purpose."

"We have made a big step forward in our work by the adoption of grade and pack rules in Spokane, which will put the fruit shipments from the Wenatchee valley on a higher plane than ever before. Packers will have to learn this fall to comply with the most rigid rules. Every box which goes from this valley marked extra fancy must comply with the rules. If the Growers' League does nothing else this season than to establish a reputation for high grade pack, and the pack being uniform all over the four counties, we will have accomplished a good work."

#### ACCOUNTING SYSTEM FOR FRUIT ASSOCIATIONS.

Copies of the accounting forms necessary in a new system of accounting for cooperative fruit associations can now be obtained from the U. S. Department of Agriculture. This system has been worked out by the Department to meet the needs of the smaller organizations which handle fruit and produce, on a commission basis. There are several hundred of such cooperative organizations in the United States at present and new ones are continually being formed. Many of these, however, are short lived, and their failure can be traced in many cases to a faulty system of accounting. In the new system described by the Department of Agriculture in Bulletin No. 225, "A System of Accounting for Cooperative Fruit Associations," and envelope system is substituted for the sale book as being more flexible. In these envelopes all records and papers are held from the time the fruit is received until payment is made by the person to whom a carload of fruit is shipped. There is thus one envelope for each carload shipment. After the car has been paid for, the difference between the amount received and the various charges connected with the shipment constitutes the balance due to the grower.

Those who desire further information on this subject are requested to apply to the Department, which through its Office of Markets is endeavoring to assist in every possible way cooperative associations in solving their various accounting problems.

## AGRICULTURE

## The Basis of Prosperity

### Root Knot, or Galls

The root knot, or crown gall menaces to plants and trees is now said to be caused by a minute nematode, (*Heterodera radiculicola*) which multiplies very rapidly under favorable conditions, according to E. A. Bessey and L. P. Byars, pathologists, U. S. Department of Agriculture.

After many years of anxious waiting on the part of nurserymen, who

occasionally were put to unnecessary expense on account of galls, there is some satisfaction in realizing a basis has been established on which this "knotty" question can be handled. These pathologists summarize their conclusions as follows:

"The life cycle may be completed in about four to five weeks, and each female may lay as many as 500 eggs.

## SILO FACTS

A silo must be absolutely air-tight to produce good ensilage and should be so constructed that it will continue to be air-tight after the first filling.

Non-conductive of heat and cold.

Economical to erect and maintain.

Strong and rigid to resist weather conditions, and easy to operate.

All necessary features for the operation and maintenance of a perfect silo are incorporated in the IDEAL GREEN FEED SILO.

Buy an IDEAL GREEN FEED SILO now and fill it with your first cutting of alfalfa, clover, vetch or peas and oats. Then plant corn to fill it again this fall, insuring yourself against burnt-out pastures this summer and the high cost of feed that will be necessary to buy next winter.

Write for Catalog B for full information.

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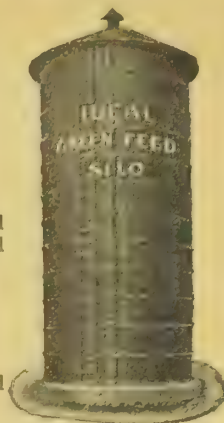
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Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.

When invaded by the worms, roots become enlarged, distorted, or deformed, resulting in a hindrance to the growth of the plant.

"Root-knot flourishes best in light, sandy soils which are moist and warm. It can not thrive in heavy soils or in those that are constantly wet.

"Most crops are susceptible to the attacks of the disease. Some, however, are resistant. The most important of these are the Iron and Brabham cowpeas, corn, barley, beggarweed, rye, redtop, sorghum, timothy, velvet bean, wheat, and winter oats.

"The nematodes may be transplanted from one locality to another in many ways, as in the roots of growing plants, and by means of tubers, bulbs, and nursery stock. They can be carried from field to field by such agencies as running water and the soil which clings to agricultural implements, the feet of men, and the hoofs of animals.

"The disease may be eliminated in greenhouses and seed beds when they are not being used by application of steam under high pressure or by the introduction of uninfested soil into clean, whitewashed benches.

"In orchards, ornamental gardens, etc., no entirely satisfactory method of control has been worked out. Cul-

tivation and high fertilization may cause trees to overcome the trouble by inducing rapid growth. In cases of local infestation, badly diseased trees should be removed and the infested soil treated with formaldehyde before replanting with healthy stock. Do not plant susceptible cover crops, as they rapidly increase the number of nematodes. Never plant an orchard on land that is not known to be nematode free. Do not plant infested nursery stock on either clean or infested soil.

"The most satisfactory method of combating the nematode in fields not planted to perennial crops is by the cultivation of immune crops for a period of two to three years and by carefully killing all weeds and susceptible plants in which the nematode can live. A desirable rotation is that where winter grains alternate with either Iron or Brabham cowpeas, velvet beans, or beggarweed. Care must be exercised to prevent running water, implements, animals, etc., from bringing the nematode from near-by infested fields. In ridding land of root-knot, plant only those crops which are known to be free from the disease.

"Starving the nematodes by keeping the land free from all vegetation for two years is an effective control



method, though often impracticable."

#### PROSPECTIVE WHEAT CROP.

According to estimates for 1915 wheat crops by the U. S. Department of Agriculture, the State of Washington will have an increase of 20 per cent. over last year while all other states combined do not show so much gain as appears for this state.

#### WHY ANOTHER SILO?

Mr. Cleo Davis, manager of the Pembroke Investment Company plant on Maury, Vashon Island, had considerable experience with silos and silage in eastern states before taking hold of this place now developing into a good stock farm of 156 acres with a dairy herd of Ayrshires, Jerseys, also some Duroc and Berkshire hogs and poultry. Mr. Davis was deeply impressed three years ago that in order to keep an even milk flow throughout the year, especially during July and August, it would be necessary to silo some of the crops which flourish in this section. It did not take long for him to figure out that the crops most naturally grown here were the legumes together with oats as a grain crop. So peas and oats were sown in the early spring and after some persuasion the owners bought two Weyerhaeuser silos of the 10x25 foot size. These were filled with a good pea-oat crop run through a cutter and carefully packed in the silo. Silage feeding began in July and when other herds in the vicinity were shortening up on the milk flow, the Pembroke herd kept up to full capacity right through the season and the silage held out until February 25 when more beet pulp was used. A little bran and shorts or beet pulp is used in connection with the silage and hay. An experiment with an acre of corn last year was so favorable that 7 acres have been planted this year, showing excellent growth in early May. Last fall vetch and oats were sown in November and will make a good cutting crop in June. Mr. Davis is planning to plow some of that ground at once and plant corn, figuring that it will mature sufficiently for silage before the usual November frost, if planted in late June.

This farm is completely equipped with modern sanitary barns and a water system. The manure is flushed into a septic tank where lime and phosphate are added, then by a gravity discharge pipe the liquid flows into another tank mounted on a wagon, and is sprinkled over the field. The good effect of this fertilizer on the crops is very perceptible.

On sandy loam soil or what is generally known as "upland coast soil," the vetch and peas will produce a larger crop when sown in November, but on the valley soils, if sown at that time the growth might be too rank before time for cutting. An instance showing that the owners are thoroughly satisfied with the silo method of solving the feed problem at this place and why another silo 12x30 feet has been put up occurred after the silage had been fed out. Their homes in Seattle are supplied with milk, butter, vegetables, pork and poultry products from this ranch. Mr. Davis received a complaint one day that the milk was off in flavor, rather bitter, and inquiry made why that was the case. The answer was that the silage had been fed out and the cows were browsing on leaves

### THE NORTHWEST HORTICULTURIST AND DAIRYMAN

of alder, willow and other wild forage plants. Immediately came back the reply, "Put in another silo."

#### CURING AND SMOKING MEAT.

Professor William Hislop, animal husbandman of the State Experiment Station at Pullman, Washington, states that it is highly essential that meat intended for curing be thoroughly cooled, because if the surface of meat comes in contact with salt before all the animal heat is removed, it will have a tendency to shrink the muscles and form a coating on the outside which will not allow the generating gases to escape. Meat, however, should never be frozen when salted because the brine will not penetrate uniformly and uneven curing will result. The hams and sides should be trimmed smoothly and no tag ends left, care being taken to expose as little lean meat as possible. For best results, the meat must be fresh. Earthenware jars give good satisfaction, but oak barrels with wooden hoops are less combersome to handle.

#### Recipe for One Hundred Pounds of Meat, by Sugar Cure Method.

Eight pounds of salt; two pounds of brown sugar; two ounces of salt-peter.

Dissolve the ingredients in four gallons of water, and boil the brine, but always pour the brine cold on the meat. Ordinarily, meat takes from six to eight weeks to cure, depending upon its fatness and quality.

Before the meat is placed in the barrels, rub each piece with salt-peter, and pile them up. In this way, some blood is drawn out. The next day, pack them tightly in the barrels, pour in the brine and weight down. Always pack the hams and shoulders on the bottom of the barrel. If the brine sours, take out the meat, wash it thoroughly and pour in new brine. After the necessary time has elapsed, take out the meat, wash it and hang it up to drip for two days previous to its going into the smoke house.

#### Recipe for Dry Cure for 100 Pounds.

Forty pounds of salt; ten pounds of New Orleans or brown sugar; four pounds black pepper; one and one-half pounds of saltpeter; one-half pound of cayenne pepper.

Mix the above ingredients very thoroughly and apply half of the mixture to the meat, rubbing it all over very carefully, but especially around the hip, hock and stifle joints. Let it lie in the barrel for ten days to two weeks, then re-rub the meat with the remainder of the mixture and leave it for four to eight weeks in a cool, dry place when it will be ready to smoke. The slow cure will give better results than the fast cure.

#### Recipe for Plain Salt Cure for One Hundred Pounds of Meat.

Ten pounds of salt; two ounces of saltpeter; four gallons of water.

Cut the carcass into smaller parts than for the brine cure. Pieces about six inches square will be best. Pour the brine over the meat. When cold; cover and weight down to keep them under the brine. The pork should be kept in the brine until used.

The experiment station in Eastern Oregon has determined that field peas are more profitable to districts of low rain fall and short seasons than wheat.



## Prompt Shipments, Quality and Workmanship First Class

We saw millions of feet of lumber from our own timber and are therefore in position to select that which is best adapted to the construction of Bee Hives and Box Shooks, and whether the orders are large or small, we are dependable for prompt shipment. Thousands of dollars have been expended in additional logging equipment during the past year to reduce

to a minimum the cost of manufacture from the tree to the finished product, the best that can be made in Hives, Fruit Packages and Boxes of all kinds.

### Everything Complete and First Class In the Box Line

Our Washington Cedar Doye-Tailed Hives last longer either painted or unpainted than any other wood hive, and in any climate. In finish they are highly perfected, in every way standard and rapidly replacing those made from other lumber. Cedar hives are unsurpassed, quality, cost and general satisfaction all considered.

In any kind of fruit boxes we are in position to supply that which will help growers to make the highly finished standard pack. Please let us know your wants in any kind of box as early as possible.

A complete price list of the Cedar Hives and of Bee Supplies will be sent you on request.

## Brew Manufacturing Company

Puyallup, Wash.

#### CREDIT FOR FARMERS

The question of credit for farmers is just now receiving the attention which it deserves, both from those who wish to make use of it and those preparing to engage in its extension. Bankers in some states use a credit sheet, on which information is collected to show that the farmer applying for credit is making good use of the means in his possession in securing a living for his family and that his plans of operation will lead to a condition for some profit margin within a reasonable time. In other words as suggested by Mr. N. B. Coffman, the well known banker at Chehalis, that the farmer must show thrift, thoroughness and that he is temperate. With these qualities he will soon adopt modern improved methods, such as may safely be put into practice in his particular case.

The co-operative stores at Kent, Enumclaw, Stanwood, Puyallup and in several other localities have a large margin of credit, both at banks and at leading wholesale mercantile houses because their business enterprises have shown thoroughness, promptness and their methods are conducted on principles which are regarded safe and sound in the mercantile lines. The same common sense methods apply in the question of credit for farmers individually.

#### BLASTING POWDER ON FARMS.

It is astonishing what a demand there is among farmers and fruit growers for the services of agri-



Harness is like a leather boot—if you don't keep it oiled, it rots. Moisture that works into the pores of your harness robs tugs, straps and breechings of the strength they need to give you good long service.

## EUREKA HARNESS OIL

keeps the pores of the leather filled with highly waterproof oils—keeps your harness soft, pliable, strong. Have your harness man dip your harness occasionally, or apply it yourself by hand. Harness costs money. It doesn't pay to neglect it.

Standard  
Oil  
Company  
(California)

cultural blasters. The powder company which first awakened an interest in the use of dynamite in agriculture receives, on an average, more



than three hundred inquiries per day from farmers asking for enlightenment on this subject. The company has a system of referring these inquiries to independent blasters, who offer their services to the farmers interested. We are informed by the powder company that there are not one-tenth enough blasters throughout the country to take care of the proffered work.

The use of dynamite in agricultural pursuits is very simple and easily learned. Subsoiling and tree planting are the largest fields for exploitation. These two classes of work are so simple that a man can learn to handle them in an hour. The question may be asked, "If it is so simple as that, why would a farmer employ a professional to do the work?" Simply because he is afraid to use dynamite himself. There is something in the word itself that inspires terror, yet properly handled it is no more dangerous than gun powder, blasting powder, acetylene gas, gasoline, and many other things which farmers very commonly use but which they do not fear because they have become accustomed to them.

Opportunities exist practically everywhere in the United States. The farmers are looking for the man that can handle their blasting contracts. Who is better qualified to do it than the young farmer? His neighbors know him, have confidence in him and will gladly employ him. He can work at the new occupation during seasons of the year when his father doesn't require his assistance in planting and harvesting. The work pays well, is not dangerous when instructions are followed, and offers opportunities for the excitement, variety and financial rewards that the young man on the farm feels to be necessary to his contented existence.

### TRACTORS IN FARM PRACTICE.

Eighteen months ago the farm tractor was a comparatively large and expensive outfit and might truthfully have been said to have no place in the operation of the medium sized farm of the general type. Now, however, the type of tractor most prominent and apparently most in demand by the farmer is a small, low-priced outfit, capable of pulling from two to four plow bottoms, and with belt capacity sufficient to operate any of the machines commonly used on the average farm.

These small tractors are of simpler construction than the large ones. Most of them have only one drive wheel and usually only one speed forward and one reverse, thus eliminating considerable gearing, including the differential gears. At the same time they permit the hitching of a two-bottom gang plow directly behind the center of draft of the machine, something which was impossible to accomplish with a wide tractor having two drive wheels without causing side draft or running the tractor partly on the plowed land.

#### Moderate Cost

The mechanical features are not so important from the farmers viewpoint, however, as its low price. The average farm already has as large an investment per acre for power as conditions will justify, and the purchase of a tractor which would

not displace its money equivalent in other power would be unwise. As a tractor's working life in years is usually only about half that of a horse, it is evident that it should displace practically double its value in horses, if it displaces no other source of power. As a rule, however, the small tractor will take the place of a stationary engine for operating the various farm machines, and the difference in the cost of such stationary engine and a small tractor is slight; so it will not always have to displace horses to any great extent to justify its purchase.

Judging by data already obtained in a study of the small, low priced farm tractor, it is safe to predict that it will soon command, on the ground of economy, a permanent place on the average farm. The degree of success which will be attained with a tractor depends very largely on its operation and the general management of the farm work so as to utilize it to the greatest advantage. Like every machine, its value is increased by being worn out as rapidly as possible in profitable work, as the interest charges are thereby reduced, and depreciation, through rust, etc., reduced to a minimum. The work of the farm should, therefore, be planned so as to use the tractor wherever practicable and to dispense with as many horses as possible. As the tractor will be capable of doing practically all the plowing on the average farm, the number of horses which must be kept will depend upon the amount of cultivation, etc., to be done, for which the tractor is not adapted. Where the tractor is used the cropping system should be planned to reduce this kind of work to a minimum.—A. P. Yerkes.

### TWO INSECTS INJURIOUS TO CLOVER SEED.

- (1) The Clover Seed Midge (*Dasyneura Leguminicola*).

The adult of this insect is a tiny delicate midge resembling the Hessian fly. It appears in late spring when clover is beginning to head and by means of a long tail-like ovipositor it pushes its microscopic yellowish eggs in among the hairs surrounding the seed capsules of the developing clover heads. The pinkish maggots work their way into the open florets to feed on the seeds. Their feeding prevents the opening of such florets and therefore the heads are irregular, a condition known to farmers as "slick heads." Toward the end of June these maggots drop to the ground, where they cocoon and pupate, and several weeks later the adults of the summer brood appear. At the time that the heads of the second crop of clover are forming the adult midges become abundant and repeat the life cycle just given. There may be two or even three such generations during the season, the last maggots doing the most harm to the seed.

- (2) The Clover Seed Chalcid (*Bruchophagus Funebris*).

The adult of this species is a tiny black wasp which measures about one-twelfth of an inch in length and whose wings are practically veinless. These adults appear in early June to deposit their microscopic eggs in the soft seeds of the withering florets. The maggots develop from these eggs and work their way into the center of

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Red Crown atomizes easily. Because of its uniform quality it saves adjustments. It's an all-refinery, unmixed gas.

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With or Without Buzz Saw Attachment Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

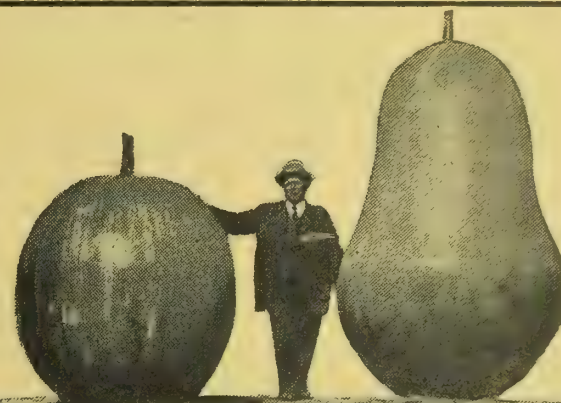
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SOLE MANUFACTURERS

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Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections.

Rose Bushes, fine assortment in two-year and three-year sizes.

Berry Plants of all kinds.

A. LINGHAM

PUYALLUP, WASH.

the seeds on which they feed. When fully grown they pupate within the seeds and later appear as adults during August. These place their eggs in the second growth of clover heads and by the time the late crop is to be threshed for seed the insects have emerged. This leaves the seeds hollow so that they are easily blown out in threshing, although the heads in this case may be well filled. As with the midge there may be two or three generations during the season.

Both of these insects are widely distributed wherever clover is grown for

seed, and both of them at times prove very destructive, affecting from 20 to 80 per cent. of the seed crop, states Professor A. L. Melander, entomologist of the Washington Agricultural Experiment Station at Pullman. Fortunately the pests can be controlled by harvesting the first crop of clover two or three weeks earlier than usual. The cutting should be done before the bloom withers, as at that time the young maggots would be unable to mature on the cut heads. This destruction of the first brood carries with it a decided lessening of



the late broods, so that when practiced the seed crop may be almost entirely saved. The early cutting of the first crop for hay hastens the development of the second cutting, so that when the second brood of adults appear there are but few green heads for them to work on.

#### SMITH-LEVER

##### APPROPRIATIONS.

The sum of \$1,080,000 is available under the act of May 8, 1914, commonly known as the Smith-Lever Extension Act, for cooperative agricultural extension work between the States and the U. S. Department of Agriculture. Of this sum, \$10,000 is granted outright to each State and the balance, \$600,000, is allotted to the States on basis of their rural population, but these allotments are paid to the States only so far as they contribute equal amounts to offset them. In other words, "To obtain the total of \$600,000, the States must likewise appropriate \$600,000 to be expended in cooperative agricultural extension work."

The joint State and Federal fund must be expended in "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise." While the States are to expend this fund, the law provides that "the work shall be carried on in such a manner as may be mutually agreed upon by the Secretary of Agriculture and the State agricultural college or colleges receiving the benefits of this act."

The actual work of supervision of the expenditure of the Smith-Lever funds will be carried on through the States Relations Service, to which the entire farmers' cooperative demonstration work of the department has also been transferred.

#### CHECK BOOK FOR FARMERS.

##### Bank Checks an Aid in Farm Accounting.

Farmers who do most of their business by check can with little effort keep a very satisfactory account of the total farm receipts and expenses. Two things are essential for the success of this method.

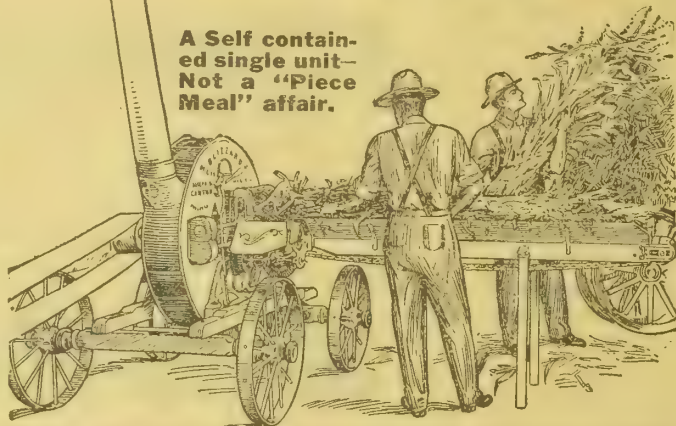
First, all money received from any source, whether in cash or by check, should be deposited in the bank. By doing this the record of deposits will give the entire farm income. Most important of all it insures against any moneys being spent without a check or stub to show for it.

Second, when drawing checks, care should be used to state for what purpose drawn. In this way the check stub will give an itemized account of the farm expenditures.

Under this system checks for money for personal use are drawn in the same way as for any other purpose. At times the purchase of minor articles for farm use will require cash when the amount is so small that it is not desirable to use a check; therefore to have an exact record a memorandum of the farm items which are paid out of the money checked out for personal use is needed. That is, these items should be charged to the farm, but they are really paid out of the pocket money which is charged

**An actual fact proved many times by farmers. Your cattle and stock like silage. They thrive on it, milk flow increases and the result is money in your pocket. Another thing, you can put your crop away when you want to—regardless of weather—put it away at the proper time—no danger of loss. A silo is crop insurance.**

## The BLIZZARD is the silo filler to use—



A Self contained single unit—Not a "Piece Meal" affair.

It is the cutter for You to use because it will give you better and longer service. The Blizzard is the original blower cutter. In fact you will find that the Blizzard is the original machine in all improvements. It is simple, compact and immensely strong. The Blizzard combines fan, knives and fly wheel, THUS SAVING POWER and making as FEW RUNNING PARTS AS PRACTICAL. The Blizzard has wide throat—positive self-feed with control that instantly starts, stops or reverses the feed rolls and self-feed conveyor. The knives cut with a shear stroke unfailingly and the fan creates a powerful blast that will elevate the silage into the highest silo. Ask any Blizzard Cutter owner what he thinks of it. We say the Blizzard Cutter stands alone—so much superior that others are hardly worth considering. Make comparisons for yourself and see.

#### At O. A. C. They Like The Blizzard

May 30, 1914.

To Whom It May Be of Interest.—The writer has had considerable experience with the Blizzard Feed Cutter and knows it to be durable, simple and compact in mechanical construction. Easy to operate and always reliable. —James Withycombe.

#### Get this book

#### "WHY SILAGE PAYS"

A book that should be in your hands if interested in silage or feeding. We send it FREE with the Blizzard Catalog on receipt of coupon from the advertisement.

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Send me copy of

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on the check book to the personal account.

A memorandum of produce exchanged for groceries is also necessary, as there is no cash transaction in such cases.

In using this system it is better to have a large book of checks, which, if the farm business is of moderate size, the banker will gladly furnish with the checks numbered and the owner's name printed on them. A check book of this kind will generally last for a year—thus the advantage of having all the accounts in one book. This check book system as an aid to keeping financial accounts on the farm is very simple and will prove valuable to a large member of men whose business is adapted to it.  
E. H. THOMPSON

#### FINANCING FARM ENTERPRISES.

When organized efforts for financing in a farm community are made the first duty is to ascertain what farm enterprises can safely be financed. This is only possible when accurate accounts are kept and carefully analyzed. After this has been done, the next step is to secure the most favorable terms for financing proper and sound enterprises. This is frequently not difficult if the committee has thoroughly mastered the subject and is able to put it clearly before local bankers. Where the local bankers are unwilling to finance genuinely productive enterprises at a reasonable rate of interest, the committee must consider other ways of



#### They Want Abundance of Feed Next Winter

When you think of a satisfactory profit margin from dairy products or beef afforded by good root crops, then you realize the value of high quality seeds that grow.

## Butzer's Seeds Grow

You can't keep them in the ground.

There is no pleasure like watching things grow. If you haven't received your copy of my 1915 catalog, drop me a postal and it will be sent to you at once. It is full of information.

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#### CATALOG AND GUIDE BOOK ON ORNAMENTAL PLANTING FREE

Full of helpful suggestions to make your place beautiful.—It's up-to-date, instructive. Please mention this paper and write to,  
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securing capital. One of the simplest plans for accomplishing this is a credit union or cooperative credit association. The essential features of this plan are that a group of farmers organize themselves to receive deposits and make loans. By keeping the expenses down to a minimum, it has been possible in some cases for such associations to pay interest on deposits that is within one per cent of the interest it charges on loans.

### SILOS AND SILAGE.

Since the condensery people have ceased to make objection to milk produced from ensilage fed cows, kept according to proper sanitary methods, dairy farmers in the coast section are putting in silos at a very rapid rate, as they will now attempt to save the full crop of June cut clover and the mixed grasses. During the past years, it is estimated, that from 30 to 40 per cent. of the first cutting of forage crops has been wasted for want of curing weather or some form to preserve the feed. The silo solves the problem very satisfactorily according to the experience of many coast farmers who put in silos last year. Most of them were fortunate to procure the receptacles which are absolutely air tight and excellent results were obtained both from the early crops and from corn silage put up later in the fall.

The State of Washington has 11 condensers with not less than seven thousand patrons who are supplying milk to these plants. Besides, there are several thousand dairy farmers who are supplying milk to the city trade and to the creameries to whom the silos also appeal. They have found a practical solution to the problem of keeping up the milk flow during the dry months of July and August by means of the silo and there is now much encouragement for each of the thousands of live stock farmers to clear a few more acres of land.

The following twelve reasons for the popularity of silage are given by Mr. T. E. Woodward, of the Dairy Division of the United States Department of Agriculture:

1. More feed can be stored in a given space in the form of silage than in the form of fodder or hay.
2. There is a smaller loss of food material when a crop is made into silage than when cured as fodder or hay.
3. Corn silage is a more efficient feed than corn fodder.
4. An acre of corn can be placed in the silo at less cost than the same area can be husked and shredded.
5. Crops can be put in the silo during weather that could not be utilized in making hay or curing fodder.
6. More stock can be kept on a given area of land when silage is the basis of the ration.
7. There is less waste in feeding silage than in feeding fodder. Good silage properly fed is all consumed.
8. Silage is very palatable.
9. Silage, like other succulent feeds, has a beneficial effect upon the digestive organs.
10. Silage is the cheapest and best form in which a succulent feed can be provided for winter use.
11. Silage can be used for supplementing pastures more economically than can soiling crops, because it requires less labor, and silage is more palatable.
12. Converting the corn crop into si-

lage clears the land and leaves it ready for another crop.

Admitting, then, the importance of silage as a large factor in modern farming, the only question that remains for the farmer is what kind of silo to build. Right here is where "you pay your money and take your choice," for the types of silos are many and the materials of which they may be constructed numerous. Probably the best method is for the farmer to select the type best suited to his individual needs, whether wooden, cement or tile.

Of all types it is safe to say that in this country the wood silo is the most numerous and of all wood silos the stave is the one most generally in use. On this subject the president of one of the well-known stave silo companies writes the following:

"Of the many types of silos now in general use, the stave silo has perhaps received more attention than any other type, and especially during the last few years. A very large per cent. of the silos now being built are of this construction. While a silo of this type may not possess all the good points of a silo, it stands to reason that they must have many excellent qualities or they would not have proven so popular as they have.

"On account of the shrinkage when the silos are empty it is necessary to tighten them up occasionally. This, however, can be accomplished in an hour's or so work on the average size silo and does not need to be followed up after the second filling, as the shrinkage is usually all taken up in the first two seasons. It is not often necessary to loosen the hoops at filling time unless they have been drawn overtight.

Men who have not fed silage are often puzzled to know why it keeps after the silo is opened. Silage keeps because it has become packed so solidly that the air can penetrate only a short distance each day. The air will ordinarily pass through silage to about a depth of two inches in twenty-four hours. Then if the silage is fed off to a depth of two or three inches daily it will always be sweet. If a less depth is fed off daily there will be soured or rotten silage.

The proper diameter for the silo to insure that a sufficient depth of silage will be taken out each day to maintain the silage always sweet, will of course vary with the amount and the number of cattle fed and the quantity fed each. For average feed, the following arrangement has been suggested:

| Number          | Diameter |
|-----------------|----------|
| Mature          | of Silo, |
| Cattle          | Feet     |
| 10 .....        | 10       |
| 20 .....        | 12       |
| 25 .....        | 14       |
| 30 .....        | 16       |
| 40 .....        | 18       |
| 50 .....        | 20       |
| 60 to 100 ..... | 22       |

### THE LOCAL DEALER.

"The simplest type of middleman's service is that performed by the local dealer," says Dr. Hector Macpherson, professor of economics at the Oregon Agricultural College. "This local dealer may be nothing more pretentious than the huxster with his single horse and wagon, gathering a stock of farm products and peddling them from house to house. More generally, however, he is known as the local grocer, butcher or flour and feed man,

## EVERY OWNER IS A BOOSTER

We have yet to come in contact with an owner of a WEYERHAEUSER SILO who is not a booster—who is unwilling to tell his neighbor that he has got the best silo on the market today. The WEYERHAEUSER SILO is made right in the first place—always renders the service that is expected of it—and more, too.

Let us send you a list of owner-booster in your territory.



Points in Favor of the Weyerhaeuser Silo:

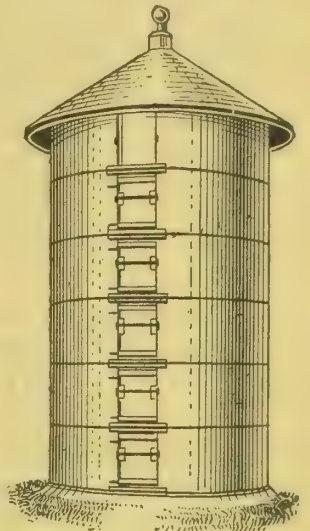
1. Its air-tight construction means perfect ensilage.
2. Scientifically designed and guaranteed anchorage system.
3. Perfectly balanced, easy-to-swing, air-tight doors.
4. Safety tread ladders.
5. Specially rolled steel hoops, thoroughly tested.
6. Specially designed, SELF-ADJUSTING roof.
7. Staves made from air-dried Douglas fir in the largest silo factory in the Northwest.
8. The guarantee of the largest lumber company in Washington.

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GLENDALE CREAMERY CO., Agents Jefferson and Clallam Counties, Port Townsend, Wash.  
ST. PAUL & TACOMA LUMBER CO., North Yakima, Wash., Agents Benton and Yakima Counties.  
JOHN H. GIBLIN, Chehalis, Wash., Agent for Lewis County.

Write for Silo Book



Weyerhaeuser Lumber Co. Everett, Wash.

Actual Photograph



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**"K" HAND-POWER STUMP PULLER**

You can pull the biggest stumps, like rowing a boat, with the marvelous "K" Hand-Power Stump Puller. One man at the handle can pull 96,000 lbs., or 48 tons. Think of it! This is more power than 16 horses, or a 9x10 "Donkey" engine can develop on a straight line pull. With the "K," land clearing becomes an easy, one-man, spare-time job.

No Horses—No Digging—No Expensive Blasting is Necessary.

**CLEAR YOUR STUMP LAND AND DOUBLE ITS VALUE!**

ADOPTED AND USED BY U.S. GOV'T., whose officials say: "It's a Wonder." Also used by many States and Counties. I have pulled 3,000 immense stumps with it, without help!

It will pull any stump that a 1-inch cable will hold. Made of Krupp steel. Built to last a life-time. Absolutely guaranteed. Works on any kind of land, dry or wet, hard or soft, hilly or level. Weighs only 171 lbs. Easily moved and handled by one man. Send for my special money-saving offer, valuable free book on land clearing, and actual guaranteed photographs of the "K" in operation. Write today.

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## Mail Your SEED Orders for 1915 Now



My stock of SEEDS consists only of those MOST-USED and BEST ADAPTED to the soils and climate of the PUGET SOUND COUNTRY.

For pure and reliable seeds send your orders to

**CHAS. HOOD, The Seed and Hardware Man**  
Puyallup, Wash.



the man who buys farm products and retails them to city patrons. The service performed by these middlemen has been a great and necessary service to the farmer. We may travel from Northern Alberta to Florida and find in every rural town or village the general store or the corner grocery handling the surplus of farm products and acting as a store house from which the rural community draws those household supplies which the farm cannot produce."

Hull-less oats and hull-less barley and Speltz are coming crops for poultrymen in the Coast Section. Sown in connection with peas, any of the above will reduce the cost of the grain feed. The hull-less oats said to be imported from China have been grown by J. A. Kilby, Yakima County, successfully, also by other farmers in the Northwest.

#### WORLD'S CORN RAISING RECORD.

The world's record for corn raising belongs to Walter L. Deenson, an Alabama boy, yet in his early teens, ac-

#### THE NORTHWEST HORTICULTURIST AND DAIRYMAN

cording to the Morrill Mail. Last year this boy raised 232 bushels of corn on a single acre of land, which is the largest yield per acre ever recorded. This remarkable record was made by an ordinary boy on ordinary land. He became interested in corn raising and studied into the matter of the kind and proper use of fertilizers and proper cultivation. As a result of putting his knowledge to practical use, he raised 232 bushels of corn on 1 acre of land, thereby winning the championship of the world. What Walter L. Deenson has done serves to show what a common every-day boy can do if he is given the chance. There are thousands of ambitious boys on farms who never know what it is to be encouraged to take an interest in agriculture or stock raising. If these boys were given a small plot of ground and some seed corn, for example, to plant and cultivate, a circus would not be able to turn their thoughts very far away from the enchanted spot where a wonderful harvest will be theirs to reap.

## IRRIGATION

**Adequate, available moisture at all seasons.**

#### LOCAL WATER SYSTEMS.

Considerable attention is being given to water systems in the Coast Section. Quite a number of farmers are located adjacent to streams where the hydraulic ram is practical and where that system can be but into use it is usually not very expensive and can be made very satisfactory. The pneumatic tank system is also becoming popular. This requires a larger expenditure including a necessary gasoline engine, but the leading farmers who virtually make their places manufacturing plants, are realizing that the necessary investment to equip a plant of this kind pays well. Another system is the gasoline engine driven pump and tank method. Large tanks are built on high posts or on elevations from where the water flows by gravity to the house, barns and yard, or field affording in some instances considerable pressure. Where truck farming is carried on or root crops grown, sprinkling by means of each of these systems has been the cause of increasing the crop in some instances to twice the amount produced without the water and in such cases the owners find the cost of a water system to be less than what would be required to buy and clear additional land to obtain an equal volume of production.

Sprinkling is nature's way of watering the land and the amount of water can be regulated to suit the needs of both the kind of crop grown and the condition of soil in question.

#### WATERING THE LAND.

It is said that the duty of water for a fifty bushel wheat crop is fifteen acre inches of water to the acre of ground. That is to say, as explained by J. C. Wheelon, Chief engineer, Utah, Idaho, sugar company canals, a crop of wheat that yields fifty bushels per acre can pass thru its roots and leaves into the air, during its entire growing and maturing season, 1,500 tons of water per acre, or an amount of water that will cover each acre of ground fifteen inches deep (an acre inch of water is

an acre of water one inch deep, and weighs a little more than 100 tons.)

A 70-bushel crop of barley can use 15 acres inches.

A 100-bushel crop of oats can use 15 acres inches.

A 100-bushel crop of corn can use 17 acre inches.

A 4-ton crop of alfalfa can use 16 acres inches.

A 300-bushel crop of potatoes can use 8½ acre inches.

#### Too Much Moisture Injurious.

"Too much watering is injurious unless under the best of drainage facilities, even then some of the nourishing elements is washed away and if the drainage is insufficient, the bacterial action of the soil necessary for the growth of vegetation is retarded.

"Water is the most patient and important element in all of nature's great laboratory, its great function is its ability to gather, to hold, and to convey all kinds of soluble materials good, bad and indifferent. Put water into the top of a barrel of wood ashes and catch it from the bottom of the barrel; analyze the water and pour it into the barrel again and when you catch and analyze the water the second time you find it carries more lye in solution than it did the first trip; it lost nothing, but gathered, held and conveyed more solids than before. Catch the waste waters from an irrigated farm in a catchment ditch, analyze them and train them upon another equally fertile farm for use in irrigation; gather these waters again and analyze them and you will find that they have gathered more soil ingredients than they contained when leaving the other farm. We need not worry about the water the crops utilize, but we must watch the excess waters that leave our farm, as we can be sure that they are carrying away plant foods that we can not afford to spare.

From the time the rain drop in its purity falls upon the mountain top and enters the soil, it begins its functions and never ceases to gather, hold and convey until it reaches the river, the lake or the sea.

Let us follow some of these waters as they are diverted to a farm for

# Up To STAY

When you build your silo, build one that will not warp, twist, crack or blow down—one that is up to stay. Build a silo that is easy to erect, absolutely air-tight and non-leakable—a perfect canner of ensilage—and yet needs no adjustment of hoops or anchors.

## Universal Silo

"Strong as a Battleship"

Does not leak, bulge or pull out of shape. It is a substantial built-up structure—absolutely non-collapsible.

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**PERFECTION CURRANT**

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irrigation upon an acre of alfalfa upon which four tons of cured hay are to be grown. The thrifty farmer has built up his soil in the five principal plant foods; humus, nitrogen, phosphoric acid, potash and lime, in a well balanced plant ration. He has also provided his acre with a water right at a duty of 100 acres to the second foot flow, or 42 acre inches per season, or 4,200 tons of water per acre. As soon as the water is applied to the land the real duty of water in agriculture begins. It dissolves the plant foods; it supplies the moisture necessary to the fullest development of the soil organisms of bacteria; it assists the bacteria in the nitrification of these plant foods, and after the ingredients are reduced to the finest state, called nitrates (which is the only condition suitable for plant use), the water holds it in solution and travels throughout the soil area and feeds all plants with this nectar of life. Right here another function in the duty of water begins in making its journey to the atmosphere.

It starts at the terminals of each and every branch of the elaborate root systems of all the plants and begins the distribution of all the various substances that make up the structure of the plant, and permits itself entirely freed of its precious load of plant food, to pass into the air in the enormous quantity of 400 lbs. of each one pound of dried grain, or cured hay or straw. In this manner, 1,600 tons, or 16 acre inches, of water have done their duty, and have performed every function, that nature has required of them to the utmost economy.

#### Preventing Waste.

But what of the excess water which is poured on the land more than is actually required?

"It tries to get away by passing down through the subsoil to some spring or stream. If that is not a sufficient outlet, the farmer spends his money and time in building a waste ditch to carry it away, always, of course, carrying in solution its valuable load of carefully prepared plant foods, and if this does not suffice, the land is perforated with tile drains to offer still further means of escape. Some 85 experiments and laboratory analyses have convinced the writer that the waters passing from farm lands rob them of valuable plant foods. Eighteen experiments have shown that water from the tile drains carries, in many cases, as much as 70 pounds of humus, 1 9/10 pounds of nitrogen, 6 pounds of phosphoric acid, and 90 pounds of potash per acre inch of water discharged. When we consider that the 1,600 tons of water delivered to the four tons of hay per acre some 60 pounds of nitrogen alone, we can see that no farm can afford to lose any of this vital element. Careful measurement and analyses upon the writer's own tile drained farm in Box Elder county, Utah, show that during two years some 10 acre inches of waste water passed out of this soil, or about five acre inches per year, and conveyed in the discharged water during these two years 800 pounds of humus, 20 pounds of nitrogen, 40 pounds of phosphoric acid, and 1,800 pounds of potash from each acre of ground. When we realize that all our arid lands are in their natural state deficient in humus and nitrogen, and that we are plowing under alfalfa and applying barnyard manures to build up

these very elements; and that a 70 bushel oat crop takes from the soil 67 pounds of nitrogen, any school boy can tell me that I cannot afford this leak in my business.

Irrigators in most of the districts under canals in the northwest have made serious errors by using too much water and doing too little cultivation. It is by pulverizing the soil that we increase its capacity for holding moisture, permitting under proper temperature, ideal conditions for the best crop production while conserving fertility to the greatest extent possible. Careless methods of watering will soon exhaust the most fertile of soils. In humid sections where tile drainage is necessary analysis should be made of the waste water to determine the extent in loss of fertility, if any, and provision made where practical, to prevent any great leaching of the elements of fertility or to recover them.

#### RIVER SURVEYS IN NORTH-WESTERN WASHINGTON.

As a result of an increasing interest in the development of water power, the United States Geological Survey has recently begun to publish profile surveys on power streams as separate water-supply papers. A late publication of this sort is Water-Supply Paper 366, "Profile Surveys of Snoqualmie Sultan, and Skykomish Rivers, Washington," prepared in co-operation with the State of Washington. This paper gives the plans and profiles of several streams now contributing power to the cities of northwestern Washington, and, in conjunction with other publications of the United States Geological Survey, gives an indication of reserve power which should be of great interest to those who are looking forward to the future growth and development of these cities and the surrounding country.

Copies of Water-Supply Paper 366 may be obtained on application to the Director of the United States Geological Survey, Washington, D. C.

#### CORN ON IRRIGATED LAND.

The ground must be cultivated enough times to keep the weeds entirely out and prevent the soil from baking around the roots of the corn, says Lee M. Lampson, Benton County Agriculturist. This surface mulch made by thorough cultivation will save the use of too much water before the tassels begin to form. The less water and the more cultivation until the tassels start, the better.

An attempt to supply the corn with water by surface irrigation instead of conserving the moisture already in the ground by cultivation, will prove fatal to your corn crop. The reason for this is that repeatedly pouring water into the ground from the surface and then allowing it to evaporate because of a lack of mulch on the surface will bake the soil, a condition to which corn roots are extremely sensitive. This is in most cases the cause of corn turning yellow.

The corn should be given only enough water to keep the leaves from curling until the tassels appear. From then until the ears are formed the moisture should be kept within an inch or two of the surface of the ground. Letting the corn suffer slightly for water at the time the pollon is forming will mean a very slight yield of ears, even though the stalks have grown remarkably well.

## Monitor Engine Now \$60!

The greatest, most powerful Farm Engine ever built to sell at such a price. Can be attached to any pump, furnishing abundance of running water for every purpose. Also runs cream separator, feed mill, washing machine, etc. The "Monitor" costs little to operate. Fewer parts than any other engine. Nothing to get out of order. Sold under absolute guarantee. Price **\$60.** Send your name on a postcard for full particulars. Do it NOW. **R. M. Wade & Co.** 330 Hawthorne Ave. Portland, Ore.

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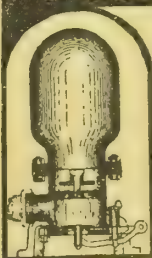
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## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. TOMLINSON

### STAIN NOT THE SKY.

By Henry Van Dyke.

Ye gods of battle, lords of fear,  
Who work your iron will as well  
As once ye did with sword and spear,  
With rifled gun and rending shell,  
Masters of sea and land, forbear  
The fierce invasion of the inviolate  
air!

With patient daring man hath  
wrought

A hundred years for power to fly,  
And shall we make his winged  
thought

A hovering horror in the sky,  
Where flocks of human eagles sail,  
Dropping their bolts of death on hill  
and dale?

Ah, no, the sunset is too pure,  
The dawn too fair, the noon too  
bright,

For wings of terror to obscure  
Their beauty, and betray the night  
That keeps for man, above his wars,  
The tranquil vision of untroubled  
stars.

Pass on, pass on, ye lords of fear!  
Your footsteps in the sea are red,  
And black on earth your paths ap-  
pear

With ruined homes and heaps of  
dead.

Pass on, and end your transient reign,  
And leave the blue of heaven without  
a stain.

The wrong ye wrought will fall to  
dust,

The right ye shielded will abide;  
The world at last will learn to trust  
In law to guard, and love to guide;  
The Peace of God that answers  
prayer

Will fall like dew from the inviolate  
air.

—From The Independent.  
The Hague, Netherlands.

### LOOKING ABOVE.

"I never could believe that Provi-  
dence had sent a few men into the  
world ready booted and spurred to  
ride, and millions ready saddled to  
be ridden."—Richard Rumbold.

... "What's the earth  
With all its art, verse, music, worth—  
Compared with love, found, gained  
and kept?"

"I press God's lamp  
Close to my breast; its splendors  
soon are late,  
Will pierce the gloom: I shall emerge  
one day."—Browning.

### HOME AND COMMUNITY CARE OF LITTLE CHILDREN.

The Children's Bureau of the  
United States Department of Labor,  
Washington, D. C., gives special at-  
tention to the home and community  
care of small children. The experts  
of this bureau will be glad to supply  
information so far as possible to  
women or organizations interested in  
these subjects and will help them  
develop child welfare exhibits. Among  
the publications which it will supply  
are:

#### Home Care of the Child.

##### Parental care.

Infant care. (Discusses the care of  
the child through the second year.)

#### Community Care.

Description of the New Zealand So-  
ciety for the Health of Women and  
Children. (Describes a method of  
co-operation among mothers living in  
rural districts, which brings to every  
woman information regarding the  
proper care of children.)

Baby saving campaigns. (Describes  
methods by which some of the Amer-  
ican cities have undertaken to reduce  
their infant mortality; including sam-  
ples of literature in various languages  
used in these campaigns.)

Birth registration as an aid in pro-  
tecting the lives and rights of chil-  
dren.

The Public Health Service, as indi-  
cated under the head of "Health and  
Common Sanitation," and in Appen-  
dix F, also issues publications dealing  
with the health of children.

#### Education of Children.

Mothers wishing to undertake the  
home education of their children, or  
individuals or women's organizations  
interested in improving the schools  
of their communities or in child wel-  
fare work, can obtain valuable pub-  
lications and advice from the United  
States Bureau of Education. The  
Bureau of Education "Reading course  
for parents No. III" gives a selected  
list, especially useful to mothers, of  
books dealing with the care of chil-  
dren. This bureau also will answer  
questions on rural civics and school  
gardens. Appendices E and F give  
lists of many publications having di-  
rect bearing on the education of chil-  
dren. Appendices C and D contain  
lists of many valuable publications  
useful for those interested in educat-  
ing children in agriculture, nature  
study, or home economics.

The American National Red Cross  
also is prepared to furnish women  
with information as to visiting nurses  
for schools in rural districts.

The Bureau of the Census will sup-  
ply many publications dealing with  
questions of illiteracy.

#### Study of Literature.

The United States Bureau of Edu-  
cation is issuing a series of graded  
outline reading courses dealing with  
the masterpieces of literature. They  
are especially designed for parents  
and for boys and girls who have left  
school. The courses thus far an-  
nounced are Nos. 1 and 2. Course  
1 consists of a study of seven im-  
portant books which everyone should  
know. Course 2 considers these sev-  
en books and in addition a number  
of other titles. These courses will  
be furnished free on application.  
Those completing any of the courses  
will receive a certificate from the  
Commissioner of Education.

#### LAUNDRY WORK.

To launder embroidery, make a  
strong suds of pure neutral soap and  
tepid water and wash the articles by  
rubbing and squeezing them in the  
hands. If the embroidery is in colors  
do not rub the soap directly upon it.  
Rinse quickly in clear tepid water,  
roll the article in a dry towel, and  
squeeze until all the water is out,  
then shake well and roll up in a dry  
towel until ready for ironing, which  
should be almost immediately.

One should have the ironing board



# Olympic

## WHEAT HEARTS

The little hearts of Wheat A tempting breakfast  
dish, easily cooked. 4 pound cartons.  
Sold by all Grocers.

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Yes, waiting for every farmer or farmer's son—any in-  
dustrious American who is anxious to establish for him-  
self a happy home and prosperity. Canada's hearty invi-  
tation this year is more attractive than ever. Wheat  
is higher but her farm land just as cheap and in  
the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads are Actually Free to Settlers and  
Other Land at From \$15 to \$20 per Acre

The people of European countries as well as the American continent must be fed—thus an  
even greater demand for Canadian Wheat will keep up the price. Any farmer who can buy  
land at \$15.00 to \$30.00 per acre—get a dollar for wheat and raise 20 to 45 bushels to the acre  
is bound to make money—that's what you can expect in Western Canada. Wonderful  
yields also of Oats, Barley and Flax. Mixed Farming is fully as profitable an industry  
as grain raising. The excellent grasses full of nutrition, are the only food required  
either for beef or dairy purposes. Good schools, markets convenient, climate excellent.  
Military service is not compulsory in Canada but there is an unusual demand for  
farm labor to replace the many young men who have volunteered for service in the war.  
Write for literature and particulars as to reduced railway rates to Superintendent Immigra-  
tion, Ottawa, Canada, or to

J. N. Grieve, Cor. 1st and Post Streets, Spokane, Wash.

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Nurserymen for four generations; 25 years at present location. From  
this experience we are producing stock which affords planters the very  
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Catalog on request. (Could use a few good salesmen.)

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Letters from motorists everywhere on the  
Coast tell of the good service they are get-  
ting from Zerolene. All makes and sizes of  
gas cars are mentioned. All sorts of road  
and working conditions are recounted.

# ZEROLENE

the Standard Oil for Motor Cars

Zerolene is the oil that will give  
you efficient service. Dealers  
everywhere and at all service  
stations or agencies.

Standard Oil Company

(California)

Tacoma





ready before beginning to wash the article, so as to cause no delay. Make a thick soft pad by folding up an old blanket, and cover it with fine, smooth muslin. With a hot iron rub over this muslin cover until it is so hot that the hand cannot be laid upon it; place the article to be ironed upon it, face down, and cover it with a smooth dry cloth; press with a mediumly hot iron until the article is dry, then remove the cloth and the article, and once more iron over the muslin pad until it is very hot, replace the article and press until dry with a medium hot iron. Turn the article over and hold the iron close to the raised parts of the embroidery to dry it out. Keeping the muslin hot on which the embroidery rests brings out the lustre.—Annabell Turner, Instructor in home economics, University of Wisconsin, Extension Division.

#### POLISHING WOODWORK.

To clean natural woodwork, dust thoroughly, wring a flannel out of hot water (no soap) and go over it. Mix two parts of denatured alcohol or turpentine with one part of cottonseed oil in a bowl, moisten a clean soft flannel with this, go all over the wood and rub with the grain. Give a final polish with dry flannel and you will have a clear, glossy surface.

#### JAVELLE WATER.

Javelle water, which is a useful bleach for removing stains, is made by dissolving one pound of salsoda and one-quarter pound of chloride of lime in two quarts of boiling water. When these substances have dissolved as far as possible and the solution has settled pour off the clear part and bottle and be sure to label the bottle properly. The dregs may be used to flush waste pipes or to scour unpainted woodwork. When the undiluted javelle water is used to remove stains from table-cloths or similar white materials the article is spread out flat and the spot scrubbed with a brush dipped in the javelle water. After this the fabric is rinsed in water containing a little ammonia to counteract the corrosive effect of the bleach. It should be remembered that the bleach has a powerful action on the hands. A small quantity of this bleach in the rinsing water will whiten yellow fabrics or those that have become dingy through water or careless methods.

#### CAKE HINTS

A good pinch of salt improves any cake.

Half water, instead of all milk, makes a lighter cake.

If your cake rises in a mountain in the middle, the reason is your dough was too thick.

If it goes down in the middle, your dough was too rich—too much sugar.

The cause of large holes in cake is too much baking powder.

To sprinkle flour in greased pans prevents cake from sticking.

A pan of water in the bottom of the oven keeps the bottom of a cake from burning.

A paper over the tin keeps the top from burning.—Philadelphia Record.

#### VEGETABLES, HOW COOKED.

In a recent bulletin on "The Cooking of Vegetables," by Miss Louise Stanley, associate professor of home economics at the University of Missouri, Miss Stanley points out that the chief reason for cooking vegetables

is to make them more digestible by softening the cellulose and by causing the starch to swell and assume a gelatinous consistency. When starch is changed in this way it is said to be hydrolyzed. Hydrolyzed starch is digestible; raw starch is indigestible. Those vegetables which have no starch or relatively small amounts of cellulose can be eaten raw.

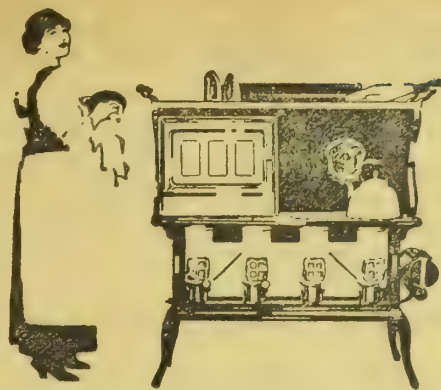
Miss Stanley further emphasizes that many housekeepers make the mistake of boiling vegetables in a large amount of water and draining off the water in which mineral salts and sugar from the vegetables are present. When the water containing these constituents is drained off, a large amount of the nutritive value of the vegetable is lost. The most serious waste in throwing away the water in which the vegetable has been cooked is the loss of mineral matter which is necessary to build bone and prevent the decay of teeth.

#### HONEY FOR MANY PURPOSES.

Various ways in which the Housewife can use honey to advantage are suggested in a new publication of the United States Department of Agriculture, Farmers' Bulletin 653, "Honey and Its Uses in the Home." In this country honey has hitherto not been in as common use as in Europe, especially in cookery. It is, however, a comparatively simple matter to substitute it in many recipes for common sugar or for molasses, and when this is done the resulting flavor is often both novel and agreeable.

One of the great advantages in the use of honey is that cakes made with it will keep much longer than those made with sugar. A honey cake made with butter, for instance, will keep its quality until the butter grows rancid, and one made without butter will keep fresh for months. For this reason honey is especially useful in recipes that call for no butter. Icing made with honey has the same advantage, and some icing made in the experimental laboratory of the Department of Agriculture was found at the end of 10 months to be as soft and in as good condition as when it was first made.

The experiments conducted by the Department indicate that many of the instructions in the old cookbooks for the preparation of honey are unnecessarily elaborate. For example, it used to be thought that honey had to be brought to the boiling point and then skimmed and cooled. Since honey is extremely likely to boil over, this process requires great care. Experiments showed, however, that it appears to be quite unnecessary, and it is probable that the notion arose at a time when ordinary commercial honey contained more impurities than at present. Similarly, the older recipes say that the dough should be kept at least one day before the soda is added. No evidence to support this theory was found by the investigators. On the other hand, however, they did discover that dough containing honey can be more easily kneaded if allowed to stand for several days. Again, the use of "potash" is recommended in most of the recipes in foreign cookbooks as a means of raising the dough. The properties of potash are quite similar to ordinary baking soda, and there seems no reason why the latter should not do just as well. Baking soda is a common kitchen commodity in America,



## Gas-Stove Convenience with Kerosene

A good oil stove is like a gas stove—ready at the touch of a match. Any degree of heat you want *instantly* by simply raising or lowering the wick.

### New Perfection Oil Cook-Stove

For Best Results Use Pearl Oil

Burns oil, the clean, cheap fuel. It roasts, toasts, broils, bakes—better than your kitchen range. No wood, coal or ashes to lug—no soot or dirt—no odor—does not taint the food. And your kitchen is always *cool*. Several sizes and styles. Ask your dealer. See Exhibit, Palace of Manufactures, Panama-Pacific Exposition.

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(California)

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and potassium bicarbonate—the potash of the cookery book is almost unknown for household purposes. As a matter of fact, a little experience will enable any competent cook to substitute honey successfully for sugar in bread, cake, preserved fruits, sauces and candies. It is safe to estimate that a cupful of honey will sweeten a dish about as much as a cupful of sugar.



Western Agents  
A. I. Root Co.

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SEED  
COMPANY

## BEE HIVES AND SUPPLIES

If you own an orchard or keep bees you should have a copy of our Catalog. It lists everything for the successful handling of bees and the production of honey. Ask for Catalog No. 53.

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PORTLAND OREGON





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Conserve Dairy Energy and figure on the Individual Cow.

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### Cow-Testing Associations Increase

Accurate Records of Milk and Butter-Fat Production Prove Their Usefulness.

One hundred and sixty-three co-operative cow-testing associations were in operation last year in the United States. This is considered to be a rapid growth when it is remembered that the first association in this country was organized in Fremont, Michigan, in 1905, and that as late as 1908 only six associations had been formed. The next year, however, the number rose to 25, and it has been increasing rapidly ever since. America is, nevertheless, in this respect still far behind Europe, where there are at the present time between 2500 and 3000 such associations, the first having been started in Denmark in 1895.

The principle on which these associations work is both extremely simple and yet important. Year after year many farmers milk cows that do not pay for the feed they consume. Indeed, the average annual production of a cow in this country is approximately 4000 pounds of milk, containing 160 pounds of butter fat. The best dairymen say there is no profit in such production, and of course there are vast numbers of cows that fall far below these figures. To make his herd a success, therefore, the farmer must weed out the animals that are costing him money and keep those that are bringing it in to him.

This, however, is not so easy as it may seem. Experiments continually show that it is impossible for any man, however experienced he may be, to estimate with any accuracy the yearly production of milk from any cow. Some animals start with a very good production and then drop to a very ordinary flow, while others give a much more regular yield. The latter may at the end of the year have given the farmer much more milk, but he will probably consider the former to be the profitable ones. As a matter of fact a man can not guess within a quart how much milk there is in a pail, and if he is selling the product of his herd on a butter-fat basis he knows even less of the yield from each individual animal.

The main purpose of the cow-testing association is to enable its members to hire a tester to keep the records which in practice it is almost impossible for the farmer to keep for himself. The tester should arrive at the farm in time for the afternoon milking, weigh the milk given by each cow in the herd, and take a sample of it to test for butter fat. At feeding time he weighs the feed given each cow and estimates as well the amount of roughage. He also keeps a record of feed given to dry cows as well as those in milk, for it is obvious that the total cost of feed for the year must be taken into consideration. The following morning the individual production of the herd is weighed again and if the ration is changed the feed also is weighed.

Later in the day the Babcock test is used to determine the percentage of butter fat in each cow's milk. From these figures it is possible to estimate the amount of milk and butter-fat given in a month by a cow and set against it the amount of feed consumed. This method, of course, does not produce scientific accuracy, but careful tests have shown that the results are within 2 per cent. of the cow's actual production.

#### Decreasing Cost to Produce.

Another feature of the tester's work is to watch the prices of various feedings and then to work out for the farmer the most economical ration. This, together with the weighing and testing of the milk will occupy him until it is time for him to leave in order to arrive at the next farm to test the afternoon milking. Thus the tester devotes one day a month to each member in the association and this limits the number of members to 25 or 26, the number of working days in a month, and defines within somewhat narrow limits the expenses of conducting the association. This has been found to be about \$550 a year including the salary of the tester, the cost of the acid for the Babcock test, and miscellaneous expenses. All expenses are usually borne by the members in proportion to the number of cows they own. Where the herds are large this may be \$1 a cow, but generally it is \$1.50 a year for each cow. To many farmers it may seem unnecessary to hire a man to do work which they themselves are perfectly capable of doing. The answer to this is that while the farmer unquestionably could do it, it is likely that during the pressure of other work he would slight his tests. As a matter of fact the number of dairymen who actually do keep records of their work for the whole year is insignificant; moreover it is really cheaper to have it done by the tester than to do it one's self. Experience has made the tester rapid and accurate; he has at his fingers' ends the strength of the acid he uses, the amount to charge for roughage and concentrates, and the analysis of all the common feeds. It would take the average farmer a long time to become familiar enough with all these details to do the work as well as the tester does.

That a cow-testing association actually does pay has been proved beyond all doubt. There are seven herds that have remained continuously in the Michigan association ever since it was formed, in 1905. In 1906 they included 50 cows, and in 1913 69 cows. In 1906 the average yield for each cow was 5885 pounds of milk and 231.1 pounds of butter fat; in 1913 it was 6123.4 pounds of milk and 284.7 pounds of fat. In the meantime prices of both feed and dairy products had risen. The profit, however, to the dairymen in the association rose as well. For each cow it was, in 1906, \$22.23, and in 1913



## Which will you buy a "cream thief" or a "savings bank" Cream Separator

WITH A GREAT MANY machines or implements used on the farm it doesn't make much difference which of several makes you buy.

ONE MAY GIVE YOU A little better or longer service than another, but it's mostly a matter of individual preference and often it makes little difference which one you choose.

NOT SO WITH BUYING A cream separator, however.

THE MOST WASTEFUL machine on the farm is a cheap, inferior or half worn-out cream separator.

THE MOST PROFITABLE machine on the farm is a De Laval Cream Separator.

A CREAM SEPARATOR IS used twice a day, 730 times a year, and if it wastes a little cream every time you use it it's a "cream thief," and an expensive machine even if you got it as a gift.

BUT IF IT SKIMS CLEAN TO the one or two hundredths of one per cent., as thousands and thousands of tests with a Babcock Tester show the De Laval does, then it's a cream saver, and the most profitable machine or implement on the farm—a real "savings bank" for its fortunate owner.

A De Laval catalog to be had for the asking tells more fully why the De Laval is a "savings bank" cream separator, or the local De Laval agent will be glad to explain the many points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

AS TO HOW MUCH CLEANER the De Laval skims than any other separator, the best evidence of this is the well-known fact that all other makes were discarded by the creamerymen years ago, and that today 98% of the cream separators used in creameries the world over are exclusively De Laval.

THEN THE DE LAVAL IS SO much better designed and so much more substantially built and runs at so much lower speed than other separators that its average life is from 15 to 20 years, as compared with an average life of from 2 to 5 years for other machines.

THERE ARE OTHER advantages as well, such as easier turning, easier washing, less cost for repairs, and the better quality of De Laval cream, which, when considered in connection with its cleaner skimming and greater durability, make the De Laval the best as well as the most economical cream separator.

REMEMBER, THAT IF YOU want a De Laval right now there is no reason why you should let its first cost stand in the way, because it may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY NEW YORK      101 DRUMM STREET SAN FRANCISCO      1016 WESTERN AVENUE SEATTLE  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**  
Grandview, Wash. (Yakima County)

## A Y R S H I R E S

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington



it was \$51.08, or an increase of \$28.85. It certainly paid these dairy-men, therefore, to employ a tester even if it cost them \$1.50 a year for each cow.

Not only do these records show which cows make or lose money for their owners, but they show to what extent each is profitable, the amount of feed given to each cow, and what kinds of feed at prevailing prices produce the most satisfactory financial results.

#### LAW GOVERNING TUBERCULOSIS.

The law enacted by the Washington Legislature of 1915 relating to tuberculosis and other diseases of domestic animals provides for the examination and testing of animals only on the written application of the owner of any bovine animal to the commissioner of agriculture. Under this law the test is not compulsory as some veterinarians have led dairy-men to believe. The veterinarians making the test are to provide a bond in the sum of \$2000.

When an animal is believed to be infected the owner has the option of indemnity or quarantine. In case of slaughter the animal is first appraised and in no case can the owner recover more than \$75.

The commissioner of agriculture has the power of quarantine at the state line when deemed necessary and to prevent any diseased animal being shipped from without to remain in this state.

Cattle which are shipped into the state for immediate slaughter are not allowed to be sold for dairy or breeding purposes.

Twenty-five thousand dollars are appropriated to carry out the provisions of this law.

#### MARK'S NOTED HOLSTEINS.

During the early part of May, 39 cows were milking to nearly full capacity in the Mark's herd of registered Holsteins. A good number are due to freshen during summer and early fall, and a fine bunch of young bulls and heifers are on pasture. That the adjacent dairy farmers in the Ahtanum valley are now appreciating pure bred, high producing dairy cattle is evidenced by the fact that during the last few months 11 registered bulls were sold in the immediate vicinity, two neighbors buying six of the lot.

One splendid bull calf, sired by Mutual Fobes Longfield De Kol, and whose dam is Maldeta Canary Mercedes, the highest producing aged cow at the fairs last fall, is developing into an ideal dairy form, and there are several other calves from the same sire whose shape could hardly be improved.

At the Portland sale one young bull from this herd sold for \$1000; another for \$575, and at the sale in North Yakima last November seven young bulls were sold at prices from \$300 to \$550 each.

The sire Sir Bessie Tritomie Fobes, taken over from the Monroe Company, Spokane, jointly by Messrs. Davis and Marks, at \$10,000, is the new herd sire here for the present. His dam is Jesse Fobes Bessie Homestead and his sire is Fobes Tritomie Mutual De Kol. His dam's junior four-year-old cow has a record of 34.96 lbs. butter in 7 days, and 142 lbs. butter for 30 days, world's records, and has twice since made 34 and three times over 34 pounds. His sire's dam is closely related to Piebe

De Kol Burke, the 40-pound cow. Some high records are anticipated in this herd from his breeding.

Mr. Marks has two large silos and produces good corn crops for silage. With an abundance of corn and alfalfa the feed problem is solved without any difficulty, for on his irrigated farm there are no crop failures. A small quantity of mixed grains, ground, oil meal and beet pulp is used to prevent monotonous ration and the entire herd is kept in fine shape, both from a breeder's and producer's standpoint.

#### REGISTERED LIVE STOCK WANTED.

A. E. Lipin, acting director of agriculture, Manila, P. I., is making inquiry for names and addresses of prominent and reliable breeders of registered cattle, horses, sheep and swine. Those who communicate with him will please specify the breed, give full particulars as to prices, also such information concerning freight or express rates from shipping point to Tacoma or Seattle as may be available. This request comes through the State College and is referred to this paper by Secretary S. B. Nelson, of the Cascade International Live Stock Show. Those of our readers having some good registered stock to offer might do well to communicate with Mr. Lipin.

#### REGISTERED JERSEY HERD. On Electric Light Farm.

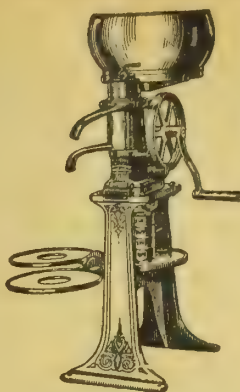
Disposing of his grade cows and establishing a registered herd with every milking cow of 20 head above the Register of Merit requirement within two years is the record of Mr. Burt Pease, proprietor of the Electric Light Farm near Ellensburg. Selections have been made from the herds of E. L. Brewer, Ed. Carey, Chas. Talmadge and others, while at the same time very careful attention has been given to feeding, breeding and general management of the stock.

Among the cows in this herd are: The 3-year-old cow Miss Muriel Olga, good for 800 pounds butter a year; Dona Beauty, which gave 482 pounds butter last year; Loretta D's Queen 3rd, with a yield of 451.6 lbs. butter in one year; Muriel Olga, with 422 lbs. butter in 10 months; Brown Lad's Lady, a 2-year-old, with 239 lbs. butter in 7 months, with all others of the herd of like high record. There are 12 daughters of the herd sire, Gertie's Brown Lad. A young herd sire has been obtained, Cowslip's Oxford (his dam was imported) and his grand sire sold for \$15,000.

Alfalfa and corn ensilage forms the principle part of the ration, but some grain composed of barley 1 part, mill feed 2 parts and some beet pulp, is added. About four pounds of the grain mixture is fed, according to the milking capacity of the cow.

Yellow Dent corn is grown for ensilage; the seed was obtained from Mr. Thornber; quality and yield was very satisfactory. The silo is an Interstate, 30 feet high, 12 feet diameter, and held about 75 tons silage which was used during the winter and spring lasting up through May. This was the means of keeping cost of production at a minimum figure.

The demonstration and work of Mr. Pease as a breeder is highly appreciated by the dairy farmers of Kittitas Valley, and they are fortunate to be able to get pure bred Jersey cattle of this rank so near their own dairy farms.



Why  
the  
Best

If a man says he has the best rat-trap in the United States, does that make it so? No.

If he gives you good plausible common sense reasons in comparison with other rat-traps, then you sit up and take notice; you think possibly he knows what he is talking about.

We told you, you could have a free trial of the best Cream Separator in the United States. We had reasons for saying it was the best.

Reason No. 1. Have you ever seen any separator bowls excepting the Anchor-Holth that were self-balancing, that would run true all of the time, get all the butterfat all of the time and save you the money paid for rebalancing?

Reason No. 2. Have you seen any separators excepting the ANKER-HOLTH that had a complete spray oiling system, that oiled all the bearings all of the time and saved wear and saved oil?

Reason No. 3. Have you ever seen any cream separators excepting the ANKER-HOLTH with an interchangeable skimming device, one that you could pick up and put in the shell in any way you get hold of it, that you could buy half of it new and put in the bowl and run your machine right along and not have to send it away to be rebalanced?

Reason No. 4. Have you seen any separators excepting the ANKER-HOLTH that had detachable shelves, that you could remove in one second, if in the way?

Reason No. 5. Have you seen any Cream Separator excepting the ANKER-HOLTH in which the dirt and filth were caught at the top of the bowl as the milk entered, and the cream delivered at the bottom of the bowl, better clarified on account of not mixing with impurities?

We leave it to the reader; a trial will show you.

**THE J. C. ROBINSON CO.**  
43 First St., Portland, Oregon

#### JERSEY BULLS FOR SALE

from Pogis Torono Stock of  
HOOD FARM

A few high class young bulls for sale. Sired by Torono's Olinda's Pogis, a grandson of Pogis 9th and Torono of Hood Farm. These bulls have a larger number of cows in the 800-pound butter class than any Jerseys in the world. Also two pure bred registered Percheron stallions by Surugua, Champion of Alaska-Pacific Exposition. They are full brothers two and three years old, solid black; none better can be bought. Will sell on terms.

**Charles Richardson**  
Richmore Farms, R.F.D. So. Tacoma

#### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 5 months. Price on application.

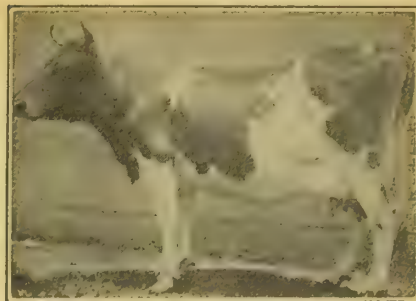
**MOUNTAIN VIEW FARM**  
Mt. Vernon, Wash.  
Otto Rundgren, Prop.

#### REGISTER OF MERIT JERSEYS

Young bulls for sale from cows with authenticated yearly records; no females for sale at present.

**DAVID C. DILWORTH**  
Buckeye, Wash.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.



#### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**  
Box 34, Milltown, Wash.

#### Extraordinary Offer

I will sell the increase from my great Register of Merit Jersey cows, sired by the greatest bulls in the West. YOU need this stock to strengthen your herd or as a foundation for great producers. This stuff can win consistently in the show ring with anything in the country. Prices \$100 and up. Special price on small herd, including bull.

For pedigrees and information, write

**E. L. BREWER**  
Satsop, Wash.

#### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

#### HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.

#### Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

**MRS. D. F. ALWARD,**  
Orting, Wash.

**GUERNSEYS** — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.

#### HOLSTEIN SIRES

Some splendid registered bulls for sale out of Lunde Artis, Requisite 3rd and Karel Bos breeding. Write for full particulars as to pedigree and prices which are reasonable.

**CHERRY VALLEY STOCK FARM**  
A. P. Malloy, Prop.  
Monroe, Wash., R. D. 1

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

**Plateau Farm**  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.



### HOLSTEIN BREEDING BY WM. TODD & SONS.

When each of a number of farmers in a community say that a certain breeder has high record, dependable Holsteins, there is good reason to believe their opinions are based on facts, and such is found to be true of the Wm. Todd & Sons' Holsteins. Investigations reveal that no culls are ever sold from this place. The high, even record of every producing cow in this herd is remarkable, showing the prepotent strength of their herd sire, Johanna Colantha Champion, which is out of Concordia and Fayne Homestead breeding.

The young cows in this herd have 26.17-lb. to over 30-lb. records. The 2-year-olds start with records of 18 to 20 lbs., which signifies at least 28 to 30-lb. record at full age.

The age cows in the Todd herd all have good records, but the remarkable fact is that every producing heifer or cow from their herd sire has a high record. One of their cows was sold to Wm. Bishop last fall for \$1500, after winning the prize for best young cow as producer on the fair ground. No wonder the young bulls of such breeding are in demand at very attractive prices.

The feeding and breeding is given very careful attention. Alfalfa and corn silage forms the basis ration, but there is ground grain, middlings, oil meal, beet pulp and proteina in the store room, available when a little change in the diet appears necessary. The feed cost, however, is kept at the minimum based on production. Accuracy and close attention to all important details necessary for the best results in breeding is the practice here and one of the reasons for their success and reputation for excellency.

### FLIES IN THE DAIRY.

Flies are a source of a great deal of trouble in the dairy business. They introduce some of the most undesirable forms of bacteria, including disease germs, in the milk. Their habit of feeding on decaying material and the feces of all animals makes them a very dangerous source of contamination. They will fly directly from the manure gutter to the milk pail, thus introducing into the milk the germs of any contagious disease with which any of the cows may be affected. They also carry the germs of the sick room or the privy vault to the dairy building, in many cases serving to spread disease broadcast by introducing the germs into the milk supply of many families.

The barn, milk room and all other places where milk is handled should be kept as free from flies as possible. If the manure is hauled out frequently and the premises are kept free from refuse, the number of flies will be greatly reduced. The manure should be removed before warm weather comes and the flies begin to hatch—J. N. Price, Dairy Specialist, State College, Pullman, Wash.

Mr. John W. McCutcheon of Rural Route No. 1, Chehalis, Wash., has built up a good producing herd of pure bred Jerseys. He is changing sire, so any one in need of a proven sire has an opportunity to buy at a basis price which can hardly fail to afford the same means of profit in breeding up as experienced by Mr. McCutcheon.

### Feed for Live Stock at the Panama-Pacific International Exposition.

The problem of feeding the large number of animals which are now and will be on exhibition in the Department of Live Stock of the Panama-Pacific International Exposition is of considerable importance. The Department supplies feed of all kinds to the exhibitors without making a profit and arrangement have been perfected by which each exhibitor will receive the feed necessary for the day.

This involves an equipment of considerable dimensions as several varieties of hay as well as of whole grain and green feed must be maintained in the feed storage building of the Department at all times.

### PROTECTION OF WOUNDS OF ANIMALS AGAINST FLIES.

When an animal is wounded, it is important to treat the wound in such a way as not to prevent its healing, and yet to prevent screw worms and house-flies from attacking the open surfaces, laying eggs, or carrying infection to the animal.

The screw worm, particularly, deposits eggs in wounds, and there are other flies that may deposit their eggs in this way. The larvae or maggots hatching from these eggs infest the wound and burrow more or less extensively in the surrounding tissues, so that serious damage may result.

The housefly alights on wounds to suck up the exudate, and is a cause of considerable annoyance to animals. It prevents wounds from healing and may introduce agents of infection which adhere to its body.

The Department of Agriculture, in a bulletin on repellants for protecting animals from the attacks of flies quotes the following formulas for application to wounds:

Jensen gives three formulas of repellants for application to wounds:

#### Formula No. 1.

Oil of tar ..... 8 ounces  
Cottonseed oil to make .... 32 ounces

#### Formula No. 2.

Powdered naphthalin ..... 2 ounces  
Hydrone wool fat ..... 14 ounces  
Mix into an ointment.

#### Formula No. 3.

Coal tar ..... 12 ounces

### Market the Milk

Raise your calves for beef, and get the bigger money to which you are entitled. But do not feed the calf whole milk, with butter fat worth \$600 a ton.

You can sell all the mother cow's milk or butter and make your calf pay you 200% profit on its feed, by raising it on

### RAISE YOUR CALVES

WITH

### BLATCHFORD'S CALF MEAL

### Blatchford's Calf Meal

The Recognized Milk Equal

You get 100 gallons of rich milk feed from 100 pounds of Blatchford's Calf Meal, and it costs you only one-fourth as much. It will make your calf grow faster.

Blatchford's Calf Meal is composed of all the elements the young calf needs in the most trying period of its life; is thoroughly steam cooked—prevents bowel troubles and other ills due to improper feeding.

Blatchford's Pig Meal insures rapid, sturdy growth of young pigs at weaning time. Prevents setback.

Write us for our Free Book on "How to Raise Calves Cheaply and Successfully Without Milk."

Blatchford Calf Meal Factory 17 Madison St., Waukegan, Ill.

L. C. Beard, Hagerstown, Md., writes: "I can say Blatchford's Calf Meal will pay anyone 100 Pct. that has calves to raise."

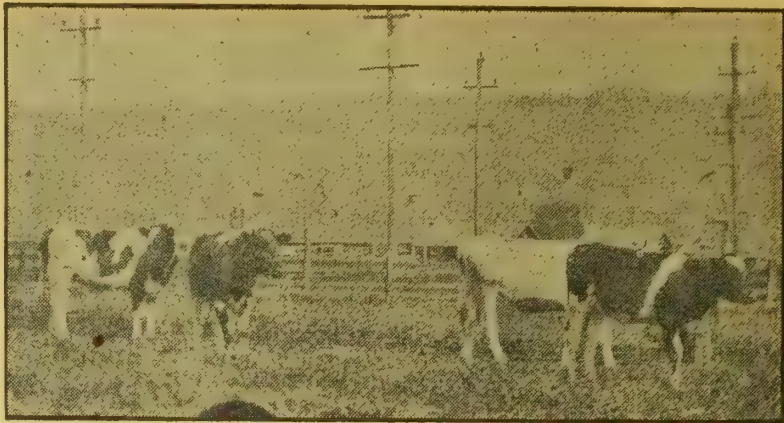


### Blatchford's Calf Meal

Is Sold By

Poole's Seed & Implement Co.

1507 Pacific Ave., Tacoma, Wash.



### FRESH COWS AND REGISTERED BULLS

Buyers are now in evidence for choice young Holstein cows also for Guernseys. There is considerable increase in the demand for Guernseys. We were fortunate to secure some very choice high grade heifers and some registered cows of imported stock before quarantine date. Some of these were prize winners last fall and are now more than making good as producers.

We also have registered Guernsey bulls ready for service whose breeding records are high, and they are right in every particular.

Write today for our descriptive and complete printed list of Holsteins and Guernseys.

## FRYAR & COMPANY

Please Mention This Paper

SUMNER, WASH.

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SALE

Upwards of 100 HEAD VERY CHOICE 2 and 3-year-olds, now coming fresh, out of pure bred sires and good producing dams; they are of good dairy type and showing to be large producers. They were selected as young heifers from some of the best working herds on the Coast and are in excellent condition. Their calves are nearly full pure bred. Early buyers have opportunity to make some choice selections. For further particulars and prices write or call.

## F. F. FOLSOM

KENT

WASH.

### COTTONWOOD GROVE STOCK FARM

#### CHOICE HOLSTEINS



Some fine young bulls to offer out of Homestead Jr. De Kol and Butter Boy 3rd breeding, sired by Dutchland Sir Fayne Colanthe, whose dam and sire's dam average 30.76 lbs. butter in 7 days, 122.93 lbs. in 30 days; brother to Grace Fayne 2nd Homestead, former world's champion. His three sisters averaged over 33 tons milk in one year. Health, condition and breeding all guaranteed. Prices reasonable. Please mention this paper when writing.

ALBERT JOHNSON

SCAPPOOSE, OREGON

## Cascade International Stock Show

Will Advise You Where You Can Buy

GENERAL UTILITY ANIMALS

REGISTERED SIRES AND DAMS

A. J. SPLAWN, President.

For Information Write

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

## Ayrshires

Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.



Carbon disulphid ..... 4 ounces  
Mix; keep in a well-stoppered bottle and apply with a brush.

Mixtures Nos. 2 and 3 are said to adhere to moist surfaces, and No 3 is said, in addition, to form a coating over raw surfaces and protect from the screw-worm fly.

### GUERNSEY SIRES IN THE ADVANCED REGISTER.

Registration is a very good indication of the production, health, strength and vigor of a breed of dairy cattle. Not only does it bring to light and public notice animals and strains within a breed capable of great production but it is slowly weeding out those animals who are unable to produce milk and butter fat profitably and then reproduce their kind.

A Guernsey sire which enters the Advanced Register must have two daughters in the Advanced Register whose records are based on a yearly production of butter fat. In the past year there have been 93 bulls added to the Guernsey Advanced Register Sire List and 67 or slightly over two-thirds of these are sons of sires who were already in the list. This would indicate that while Guernsey breeders are following up the present popular lines of breeding many new strains of good producers which possess great vigor and constitution are being discovered. One hundred and fifty-one of the Advanced Register bulls in the list which appeared a year ago have 356 added Advanced Register progeny and the 93 new bulls in the list have a total of 238 Advanced Register progeny.

The average fat production for the breed is also steadily increasing. Since January 1913, it has been raised over 13 pounds and is increasing at a faster rate at the present time than ever before. Eighty records just received at the office for approval show, with only one record of over 800 pounds of fat, an average production of 445 pounds of butter fat.

#### Advanced Register and Dairy Herd.

Advanced Register Record is a term which ought to be thoroughly understood by every dairy farmer who is milking cows for profit. Most breeders of pure bred live stock are familiar with it, and from the great increase in the number who are making Advanced Register tests in recent years we have convincing evidence of the value which is placed upon Advanced Register records by men of this class. The term, however, often means very little, if anything, to the average farmer.

It has been demonstrated that the man who is milking cows for a business can make the most profit from animals which are large individual producers. Large individual producers in grade herds are obtained by mating the cows with bull which are descendants of great producing ancestors.

These bulls cannot be picked out by their looks. Therefore a bull which is purchased with the idea of raising the average production of a herd ought to have an Advanced Register dam, or in other words, a dam with an Advanced Register record. The only advanced register record which is recognized by the Guernsey breed as an indication of a cow's productive ability is her yearly production of milk and butter fat. Every cow that produces such a yearly record exceeding a certain minimum requirement of milk and fat pro-

duced under conditions required by the American Guernsey Cattle Club enters the Advanced Register and is given an Advanced Register number and certificate.—A. G. C. C.

### FAMOUS HOLSTEINS AT GRANGER.

During the past two years the vicinity of Granger, Washington, has become famous for high record registered Holsteins through the far sighted policy and skillful breeding of Mr. H. C. Davis, president Washington State Dairymen's Association. There are also other breeders of horses, hogs and cattle here and it is the opinion of Mr. Davis that the demand for the registered stock of quality from all parts of the Northwest and particularly from central Washington points, during the next few years will exceed the supply. Corn ensilage and alfalfa throughout the irrigated districts and in the coast districts such forage crops as clover, vetch, oats, together with corn ensilage, will enable dairy farmers to produce butter fat profitably at the average market prices which prevail throughout the year.

For the past eight years Mr. Davis has aimed for the possession of a registered Holstein herd of the 7 day-30 pound, butterfat producing class and the registry test shows his entire milking herd very close to that line with a number of his cows considerably higher.

A very important feature in the development of this herd is the production of an animal with strong frame highly developed in flesh as well as a producer of butterfat. This feature is characteristic of the Pontiac strain and in any new blood introduction Mr. Davis is careful not to lose sight of vigor and ability for a long period of butterfat production.

The herd sire is Mutual Fobes Longfield De Kol, owned jointly with Mr. Marks, and whose producing daughters are all well up to the 30 pound class. The new herd sire Tritomie, described in another column, will be used later, the policy being to keep in line and to avoid any and all defects from inbreeding.

On his ideal irrigated farm of 140 acres, 40 were planted this spring with Yellow Dent corn, and during the last of April was 3 inches above the ground. That piece, said Mr. Davis, will produce 100 bushels corn per acre. It has been in alfalfa for about six years and is well enriched with nitrogen. It was plowed late last fall then disced, harrowed and rediscd this spring so many times that the ground was in the most perfect order as a seed bed and is entirely free from weeds. The water will be applied judiciously and the cultivation will be frequent and thorough.

The first crop of alfalfa was maturing to be cut about the middle of May and two large silos are on the place to receive the crops, if curing weather for hay does not prevail or when the corn is ready.

A Kewaunee water system in perfect working order supplies water to all buildings from a well 112 feet deep. The stable is modern in plan, handy for working and sanitary.

In this herd of about 100 head there are forty-five cows coming fresh between now and September and with the young calves up to six and nine months of age, a fine crop of choicely

## HEAD YOUR HERD

with a grandson of the mighty **KING OF THE PONTIACS**, the leading Holstein-Friesian sire of the World, through his promising young son **KING KORNDYKE PIETERTJE PONTIAC**.

A nice lot of young bulls for sale from large record A. R. O. cows, such as Ophelia Sanesta Pauline, 29.46 pounds; Josephine Duchess, 29.12 pounds, and 23 others with records above 20 pounds.

Greenbank, Washington

Calvin Philips,  
President

Guy M. Richards,  
Manager

## Registered **H**OLSTEIN and High Grade **C**ATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

**H. S. ROYCE**

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

## Puget Sound Herd Holsteins

Herd sires: "Quirinus Cornucopia." Five of his first daughters to be tested at an average age of 2 years 1 month have made records that average 19.5 pounds butter in 7 days, 2000 pounds milk and 76.1 pound butter in 30 days. One 2-year-old in the yearly test produced in 9 months 17,915 pounds milk and 725 pounds butter. "Sir Chimacum Wayne," the World's greatest milk and butter bull, his sons up to 5 months of age now being offered for sale.

**Wm. Bishop, Chimacum, Wash.**

LA CONNER FLATS STOCK FARM

### REGISTERED HOLSTEIN CATTLE

Our service sire, Segis Pontiac Acme, has dam, grandam and great grandam with average year's A. R. O. records of over 24,000 lbs. milk and 1080 lbs. butter. A few choice young bulls from tested dams.

Also Duroc Swine

J. H. HULBERT, JR.

MT. VERNON, WASH.

"WE PURCHASE and always pay best prevailing market prices on all kinds of LIVE STOCK, HIDES, PELTS, TALLOW, and POULTRY, and will quote you if you will advise us what you have to offer for sale. In return we offer to sell you our New Process Beef Scraps for chickens. Bone Meal; Granulated Bone; Digestible Tankage for hog food, and all kinds of fertilizers.

We patronize Home Industry and ask you to reciprocate."

**CARSTENS PACKING COMPANY**

Please mention this paper

Tacoma, Washington



bred youngsters may be seen here during the summer and fall.

Mr. Davis believes it is within the power of any dairy farmer in the Northwest who will adopt proper working plans to start bare handed and make himself comfortable and to get out of debt during a period of five years.

#### COLORING IN MILK

Yellow coloring matter in milk is called carotin. It takes its name from the carrot, where it is very abundant, and where it was first discovered by scientists more than one hundred years ago.

The difference in the color of cream and butter in winter and spring was found to be due to the fact that the winter feeds contain little or no carotin. No marked increase in the fat percentage accompanies the increase in color when foods rich in carotin are fed. It has been shown that the average cow gives a higher per cent. of fat in its milk during the winter than in the spring and summer. Carotin is widely distributed in plants.

#### LOW COST OF PRODUCTION.

If I had only the ordinary cows giving 20 to 30 pounds milk a day, the present price of 10 cents per gallon for milk would make my balance sheet look rather discouraging, said Mr. Otto Rundgren, of Mt. Vernon, recently. "But I was fortunate enough to get on a good track when I bought Lunde Oregon Fine of P. A. Frakes. With a registered sire whose dams and sisters have high records I have raised 5 daughters from this cow and they each yield from 90 to 102 pounds milk a day. Besides, she has produced five fine young bulls.

My herd sire is Sir Bessie Homestead Johanna Fayne, whose granddam has a record of 35 lbs. butter in 7 days."

"When the condensed milk market is over-supplied I can make butter for these cows test 3.6 to 3.84 per cent. fat. I don't see how any dairyman can afford to stay with this industry unless they have good producing cows and figure on a low cost of production.

#### GREENBANK FARM HOLSTEINS.

Greenbank Farm, the property of Mr. Calvin Philips, is located on Whidby Island, about 15 miles west of Everett and about 40 miles northwest of Seattle. Of the original 6000 acres comprising Greenbank, about 1500 acres have been sold and

of the 1100 acres reserved for the farm, 300 have been cleared, a large part seeded to pasture and a portion devoted to general farm crops.

On a beautiful gently sloping hillside, covering 100 acres, is a crop of red clover and rye grass which appeared to be good for at least a ten ton per acre silage crop when ready to cut in June. When seen in May this field with its modern and completely equipped buildings in front, certainly bore the full significance of its name "Greenbank." There is a good wharf, store, hotel, creamery and dairy barns, 11 houses in the group all arranged to conform to the general plan of efficiency, comfort and good sanitation.

Up to September, 1913, the dairy herd was composed of high grade Guernseys and Jerseys, all good producers, but having planned under the management of G. M. Richards to engage in breeding in connection with the production of milk and butter fat, the grade cows were all sold and registered Holsteins bought to fill their places. In the herd is now 36 cows of which 35 have advanced registry records ranging from 29.46 lbs. butter in 7 days to 26.41 lbs. Several are over 25 and more than 25 of the cows giving over 20 pounds butter fat a week. The milk yield from 33 cows is 1700 pounds a day and is sold to the milk trade in Everett at very satisfactory prices. The cows are milked 3 times a day, at 3:30 a. m. and 11:30 and 7:30 p. m. The feed consists of clover and rye pasture, some beet pulp and barley 2 parts mixed with bran 1 part. During the pasture season very little of the grain mixture is used. Corn silage was put up last year with very satisfactory results while the clover and rye grass silage put up in June was the basis of the feed ration from July on through the year. The same cropping plan will continue, except that vetch and oats or barley and vetch may be added by another year. Mr. Richards fed beet pulp with most excellent results in milk production, even after the pasture season was well along this spring, and compared with bran he says it is the cheaper of the two. By another season the cropping plan will be so arranged that but a very small proportion of the feed need be brought from outside.

Last year a noted herd sire, King Korndyke Pieterje Pontiac, a son of the King of the Pontiacs, was purchased at a long price. His sire has the only 44 lb. cow and is the only

#### LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

P. A. FRAKES

Scappoose, Oregon

#### Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

#### Dairy Supplies

Cream Separators, Anker-Holth unsurpassed, testing outfits, milk-bottles, seal caps, stanchions, churns, everything required to equip a modern dairy farm or creamery.

Remember that quality is strictly our watch-word and our prices are reasonable.

Poole's Seed & Implement Co.

1507-9 Pacific Ave.

TACOMA, WASH.

#### Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

#### Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DURC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

#### CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

#### Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

EDWIN PETTETT Dungeness, Wash.

#### Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.



Holstein cow May Korndyke 2nd, whose 3 year-old record is 26.30 lbs. butter fat in 7 days. She is the dam of King Korndyke Pieterlye Pontiac, the herd sire in the Greenbank Herd.

bull with 144 advanced registry daughters. Last fall seven young cows were purchased from the Wm. Todd & Son herd which is noted for its high and even records.

Among some of the large milkers in the Greenbank herd are Foran Sarcastic, 72 lbs. milk a day, 2 months fresh; Lady Marie Van Count, 67½ lbs. milk; Violet Blossom, 68 lbs.; Nancy Posch, 64 lbs.; Netherland Pansy, 64 lbs.; and so on down the line with a gradual decrease towards close of the lactation period.

A crop of very fine calves sired by their King Korndyke has been born since January. Without exception they show very strong dairy type, good backs, deep bodies and founda-

tion for good milk producers.

The wisdom of changing from grades to pure bred was plainly evidenced at the public sale held at Snohomish, March 17, when 3 bull calves from this herd were sold for \$705, or an average of \$235 each. If they had been high grade only the price would not have averaged over \$35 each for that would be the meat market value.

Young Registered cows and heifers of this breeding sells readily at prices above that brought for the bulls.

It is not difficult to figure what a registered herd of 100 producing cows of this class will bring in as monthly revenue with feed produced



economically and the herd well managed.

It is a demonstration farm well worth while for those to visit who are seeking practical information along dairy lines. The results of many years of experience are unfolded to the observer of Greenbank Holsteins in a manner which should be very helpful.

#### FRYAR'S GUERNSEYS

##### AND HOLSTEINS.

Mr. B. S. Fryar, Sumner, has a bunch of 30 fine registered and high grade Guernsey heifers and cows, one of which was a leading prize winner in the show ring last fall exhibited with another herd. They are all making good at the pail and Mr. Fryar regrets that his purchase of Guernseys in the east of imported stock was not more extensive before the quarantine. Many of his old customers are now eager to add Guernseys to their herds and there will not be enough to supply the demand.

His Holstein cows are nearly all sold, but there are a lot of choice pure bred calves, some of which are likely to make as good records as those sold from this herd to Mr. A. E. Smith, Sumas, Wash., the Hollywood Farm, and to several other dairy herd owners.

While at the present prospective buyers say money is somewhat scarce, there is considerable preparation being made for the enlargement of dairy herds in the near future. The demand now is for the better quality says Mr. Fryar.

#### DIARYING AT FOREST, WASH.

H. G. Corp of Forest, Wash., reports much improvement in that vicinity among dairymen in their methods, particularly from a sanitary point of view. A larger proportion of the feed required is produced on the farms than formerly. Oats and vetch, or barley and vetch are the early crops for the silo, with corn for the fall silage crop, then with a little bran or beet pulp there is a good balanced milk ration. The poor or low producing cows are gradually being replaced by better ones.

#### STANDARD FOR MILKING SHORTHORNS

Breeders of milking Short-horns met at Willoughby, Ohio, recently, and adopted a standard of perfection. Animals which come up to his standard are to be admitted to registry in a year book of merit. It is hoped that this plan will encourage more breeders to keep individual cow re-

## Holsteins of Pontiac and Hengerveld Dekol Breeding



Our advanced Registry list has been proven more efficient and greater in numbers of high record cows than we had anticipated. As a number of young registered cows are coming fresh we spare a few more which would make valuable foundation stock for other herds.

We also have a fine crop of calves and some Registered bulls. These bulls and youngsters are all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

Naturally the demand increases for dairy cattle during the abundant pasturage season and now is a good time to get started right.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

records, and that the breed will become as noted for milk and butter production in this country as it is in England.

A heifer under thirty months of age, to be entitled to registry in the year book, must produce 5,250 lbs. of milk, and at least 210 lbs. of butter-fat. The requirement increases as the animal gets older, at the rate of three lbs. of milk and one-tenth of a pound of butter-fat for each day over thirty months of age. For example, a cow four years of age would have to produce 6,900 lbs. of milk and 265 pounds of butter-fat, while a cow five years or more would have to show a milk record of 8,000 lbs. and a butter-fat record of 300 lbs.

Records made prior to May 1, 1915, will be accepted on the basis of milk alone. This is simply to get a foundation on which to start. All records made after that date must meet with the butter-fat requirement. The dairy Short-horn men expect to accomplish much in the next few years, as the American Short-horn Breeders' Association has agreed to cooperate with this organization in developing the milk producing qualities of the breed. In this country, this quality has been overlooked in an effort to produce beef only, but in England both the meat and the milk producing possibilities have been developed until there are many herds which make records of from 10,000 to 15,000 lbs. of milk in a year, besides producing their share of the beef consumed there.



Sir Johanna Ruth Fayne, No. 53055, the noted herd sire in the J. L. Todd & Sons Holstein herd. All his daughters have high butter fat records.

#### VALLEY VIEW DAIRY FARM



Registered Holstein bull calves of all ages for sale.

Calves sired by Mutual Fobes Longfield De Kol and Annie De Kol Lakeside Model. Both proven sires with better than 30 lb. dams and better than 30 lb. sisters. Both are show animals as well and of high class. Also some females of all ages for sale.

For particulars, description and price, write,

H. C. DAVIS,

Granger, Wash.

## Cause of Variation in Market Cream from Farm Separators

By V. R. Jones, State College, Pullman, Wash.

(Compiled from various Experiment Station Bulletins.)

The question of variation in per cent. of fat in cream marketed at the different creameries causes considerable trouble at times among their patrons, and will continue to do so until the farmers understand more fully the conditions that cause this variation. Most farmers have learned that by proper adjustment of the cream screw the per cent. of fat in the cream may be increased or decreased; but they have noticed that their cream tests have varied from two to fifteen per cent. or more from week to week, or from season to season, even when the cream screw had not been changed.

The farmer is apt to conclude that when the milk is from the same herd, and there are no apparent irregularities in feeding, milking or separating the cream, the per cent. of fat in the cream should not vary. The extreme variations in tests are likely to cause him to feel that the cream is not being accurately tested. The fact is, a uniform test from week to week would be more indicative of dishonesty than a variation of a few per cent. in the test. Occasionally an incorrect test is made, but this is an exceptional cause for variation rather than a usual one.

It is very true that great care is needed to test cream accurately, and there may be operators of the Babcock test who are incompetent and

unreliable, but such operators are not long tolerated by any creamery manager.

Factors affecting the per cent. of fat found in cream, other than possible inaccurate and dishonest testing, may be summarized as follows:

1. Richness of milk separated.
2. Changes in temperature of milk.
3. Speed of separator bowl.
4. Rate of inflow to separator bowl.
5. Amount of skim milk or water used in flushing the separator bowl.

Any one of these five phases of separator management will influence the test of cream, even when the cream screw has not been changed. However, if a variation in these conditions is avoided as much as possible, the richness of the cream may be controlled to a great extent.

#### Effect of Richness on the Per Cent. of Fat in Cream.

When the cream screw is set to deliver a certain per cent. of fat in the cream, under normal conditions there will be a definite ratio between the skim milk and cream separated. That is, if the separator delivers twelve pounds of cream and eighty-eight pounds of skim milk from 100 pounds of three per cent. milk, the test of the cream would be 25 per cent. On the other hand, if a four per cent. milk is separated under the same conditions, instead of getting more cream than from the three per cent. milk, we would get approximately the same amount; viz, twelve pounds, but it would test about 33 per cent. The change in per cent. of fat in milk is caused by several fac-



tors, one of which is the change from dry feed to succulent pasture, which results in a decreased fat percentage. On the other hand, in the fall and winter when the cows are advanced in lactation, and are put on dry feed, fat percentage is increased. The following table, taken from Bulletin No. 150, Indiana Agricultural Experiment Station, shows results of experiments in which the cream obtained from milk containing different percentages of fat varied from 20 to 39 per cent., though the milk was run through the same separator under the same conditions, without changing the cream screw:

| Milk<br>Per cent.<br>of Fat | Cream<br>Per cent.<br>of Fat | Skim-Milk<br>Per cent.<br>of Fat |
|-----------------------------|------------------------------|----------------------------------|
| 3.0                         | 20.0                         | .06                              |
| 4.5                         | 32.5                         | .06                              |
| 6.0                         | 39.0                         | .14                              |

#### Effect of Changes in Temperature.

Milk, when drawn from the cow, has a temperature of about 90 to 95 degrees Fahrenheit, the best practical temperature at which to separate it. If the milk is allowed to cool much lower than 85 to 90 degrees Fahrenheit, as is likely to be the case in the winter, it should be warmed up before separating, thereby avoiding considerable loss of fat in the skim milk and variation in the richness of the cream.

Changes in temperature of milk separated cause a variation ordinarily from three to four per cent. of fat in the cream.

#### Effect of Speed of Separator.

The effect of speed of the separator bowl on the per cent. of fat in cream is probably greater than any other cause. The higher the speed the greater the centrifugal force; and the more rapidly the skim milk will leave the bowl. Thus, if the speed is increased, the capacity of the skim milk outlet increases, which leaves less milk for the cream outlet; consequently a richer cream results. Variations in speed may cause a difference, under ordinary conditions, of five per cent. to twenty per cent. of fat in cream separated, the difference in richness being greater when the machine is set for a thick cream than when set for a thin cream.

#### Rate of Inflow and Richness.

Every cream separator is limited to a definite capacity, and any machine is operated at its greatest efficiency when the amount of milk separated per hour is kept within this definite capacity. Crowding a separator will give thinner cream, with a large loss of fat in the skim milk. If the rate of inflow is decreased it results in, first, smaller amount of cream in proportion to skim milk; second, higher per cent. of fat in cream; and, third, loss of fat in skim milk not materially affected.

The amount of milk in supply tank which enters the bowl affects the per cent. of fat in cream. The more milk there is in the tank, the more rapidly will the milk flow through the bowl on account of the greater pressure. If the tank is kept one-third full, the cream will be thicker than when the tank is brim full.

#### Skim Milk or Water to Flush.

If just enough flushing is used to discharge the cream remaining in the separator bowl, the per cent. of fat in the cream will not be materially changed. When an excess of water or skim milk is used the fat test in the cream is lowered considerably. It

is a better plan to pour the flush water or milk into the supply tank; then it will gradually run into the machine, and most of it will then pass through the skim milk outlet, making little change in the richness of the cream, while great variation in the richness of the cream is brought about by the practice of removing the float and pouring the flush water or skim milk directly into the bowl. In the latter case the machine is not able to handle the rapid flow, so more runs into the cream, thereby lowering the per capita of fat.

The proper cleaning of the separator after each separation is of great importance. Cream that is separated by separators that have not been washed after each separation, or only washed once in two or three days, is dangerous to health and unfit for buttermaking. The mere running of warm water through the machine after separation is not sufficient cleansing to insure a first grade cream. In order to remove the portion of cream clinging to the inside of the bowl, and particularly separator slime, which readily decomposes, it is necessary to take the bowl apart and thoroughly cleanse it.

Furthermore, there is a considerable loss of fat in skim milk caused by an unclean separator bowl, which no farmer can well afford to disregard. The following average of a series of experiments shows the loss of fat in skim milk from an unclean separator to be three times as great as the loss where the separator is washed after each separation:

|                                                           |       |
|-----------------------------------------------------------|-------|
| Loss of per cent. of fat in skim milk when separator was— |       |
| Washed after each separation.                             | .038% |
| Washed once a day .....                                   | .10 % |

#### Separating Sour Milk.

Milk that has curdled will separate with difficulty. Previous to separating, such milk should be thoroughly mixed by pouring from one can to another, breaking up the curd as finely as possible, so as not to clog the machine. The separation of curdled milk finally clogs the skim milk tubes, with the result that more skim milk passes through the cream outlet, making a thinner cream. While, on the other hand, when sour milk which has not curdled is separated, the cream produced will be thicker. This is due to the fact that cream from sour milk has a high viscosity, or is less fluid, and a smaller proportion of cream is delivered, containing a higher per cent. of fat.

#### Balanced and Unbalanced Separators.

A separator that is not kept level, causing a vibration of the bowl, can not do efficient work. When milk is separated in a balanced bowl the milk is divided into three layers; namely, cream, skim milk, and the separator slime, each finding its respective outlet. If the machine trembles, a portion of the skim milk and cream is mixed by the vibration of the bowl, and a large per cent. of fat is lost in the skim milk.

#### Rich Cream.

The cream separator screw should be set to deliver cream containing from 35 to 45 per cent. fat. Cream of this richness has a better keeping quality; it is less bulky to handle, and more skim milk is left on the farm for feeding purposes than when a thin cream is skimmed. Aside from the fact that cream with a high per cent. of fat is an economic benefit to the patron, it is also of great im-

# Crown Silos

Are now in use at the Western Washington Experiment Station, Puyallup, and at the Pierce County Farm, Sumner, Wash. Public institutions like these always buy the best. Many of our successful dairymen have followed their example. They are saving enough of their June cut forage crops to pay a handsome profit on the investment. Why not you? Write for Catalog, testimonials and price list today.

## Holland=Cook Mfg. Co.

Fern Hill Station

Tacoma, Wash.

### A GUERNSEY BULL

A very fine 2-year-old Guernsey sire is offered for sale. He is sired by Melba's May Prince, out of Imported Chartreuse, with advanced registry test of 10,238 lbs. milk and 525 lbs. butter in one year. This is a rare opportunity to get a young Guernsey bull of this class. The price is reasonable considering ancestral records and the excellent quality of the animal. Write for particulars. **AUGUSTINE & KYER,** First St., Seattle, Wash.

### Chicona Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

**A. L. GILE, Prop. CHINOOK, Wash.**

#### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

**GEO. A. GUE**  
North Yakima, Wash.

### Marrow Cabbage

Those who tried it the last two years are ordering more seed. Don't delay but send at once any amount from 25 cts. to \$1. for a generous quantity.

Descriptive Circular Free.

**E. E. MARTIN, Bangor, Wash.**

### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**  
Route 1 Everson, Wash.

**GOOD REGISTERED BERKSHIRES** — Choice pigs, \$10 each at weaning time. **W. D. GOOD, Mt. Vernon, Wash.**

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. **GEO. W. HAYTON, Mt. Vernon, Wash. R. 3, Box 73.**

**WANTED**—Two or three pairs of young Angora Goats, from 3 to 6 months old. Price must be reasonable. **NEUCHATEL NURSERIES, Burlingame, Calif.**

portance to the creamery in the manufacture of the best quality of butter, as it allows pasteurization and the use of starters in ripening cream to be carried on with better results.

### Registered Jerseys BERKSHIRE SWINE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

**A. G. WOODWARD**  
Route 1, Box 12 Fairbanks, Wash.

**BLACK LEG** LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. **THE CUTLER LABORATORY, Berkeley, California.**

### BERKSHIRE SWINE

Choice registered weaning pigs at \$10 to \$15, satisfaction guaranteed or stock returnable.

**HOMER NELSON,**  
Box 288, Marysville, Washington.

**SILVER BIRCH FARM BERKSHIRES**  
WRITE FOR CATALOGUE  
**CHAS. M. TALMADGE**  
R 1 Box 3 NEWPORT, W.V.

### "B. K. M. BERKSHIRES"

Bred Gilt, Sows and Boars for sale  
Good pigs \$10.00 to \$15.00 each.

**WOODLAND FARM**  
Lacey, Thurston Co., Washington

### Electric Light Farm

### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

**Burt Pease Ellensburg, Wash.**

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1 Lynden, Wash.

**FOR SALE**—Pedigreed O. I. C. Hogs \$15 each. Wild and Bronze Turkeys, eggs 25c and 35c. Pure bred White Leghorns eggs 15 for \$1.00, 100 for \$4.50. **E. Y. SANDERS, Roy, Wash.**



### DRIED BEET PULP FEEDING WITH GREEN FEED.

Now that pasturage is plentiful, there is a tendency on the part of some dairymen to cut out the grain ration entirely and let the cows have their fill of green feed. It has been proven in a good many instances that a small ration of dried beet pulp in connection with the green feed will have a tendency of making the pasture hold out longer and will also increase the milk supply. The following letter will illustrate the point.

Oregon City, Ore.

The Larrowe Milling Co.,

Los Angeles, California.

Gentlemen: "In regard to my experience with Larrowe's dried beet pulp in connection with kale, I have been balancing a ration for last winter as follows:

To a cow in good flow of milk, 30 lbs. kale, 6 to 7 lbs. bran, alfalfa meal and dried beet pulp of even parts besides oat and vetch hay. I had much better results in keeping an even milk record than any winter before. After the kale was gone, I increased the amount of beet pulp and the cows kept up the same record.

Just recently I experimented with cows in full flow on plenty of green feed, by giving them a small ration of bran and dried beet pulp, and found out that they pay for this extra feed by increasing their daily record four lbs. of milk each.

It is a pleasure for me to see with what a great relish they go for this feed."

Respectfully,

HENRY SCHNEIDER,

R. F. D. No. 5.

A little experimentation will prove that dried beet pulp can be profitably fed all the year round even when abundant pasturage is available.

### CASCADE INTERNATIONAL GUARANTEE.

At a recent meeting of the Executive Board of the Cascade International Stock Show, which was held at North Yakima, the Secretary was instructed to write to every member of the Association and obtain their authority to advertise broadcast that whenever any person purchased stock from a member of the Cascade International Stock Show Association and should the stock not be as represented, that the animal would either be replaced or the money returned to the buyer.

It is not often that such a situation as this would arise, but should it, it is the object of the Association, as far as possible, to stimulate the buying of livestock from its members by guaranteeing the quality, and then to use every legitimate effort to see that the seller, if a member of this Association, makes his guarantee good.

This is one of the many objects that the Cascade International Stock Show has for benefiting and advancing the livestock industry of the Pacific Northwest.

S. B. NELSON, Secretary.

Cascade International Stock Show.

The Brew Manufacturing Company, Puyallup, is a very busy place filling orders for bee hives from all over the coast and from some outside points, also their fruit box material is being made ready for shipments far and wide. Increased acreage of berries in the coast section has caused

a greater demand locally than was required last year.

Messrs. Tyson and McKelheer, of Moxee, Wash., are developing a fine herd of Registered Holsteins which is becoming attractive to buyers, who, are preparing to engage in breeding and dairying.

F. F. Folsom, Kent, Wash., has a profitable, large milking herd of Holsteins. When the condensed milk market is over supplied he sells cream at a good profit margin. His cows are all young and those selecting from them for good dairy work derive a high measure of satisfaction.

### JERSEY BULL SATISFACTORY.

B. C. Crabtree sold the "Duke of Clovernook," a bull calf, two years ago to L. E. Walberg, in Coupeville. He received the following letter showing the remarkable records made by the daughters of the Lynden animal: "The Duke is now a fine bull, 1800 pounds, and the best natured bull I have ever seen. I am milking one of his daughters now, 2-year old, which gives 20 pounds of milk a day, testing 5 per cent. butter fat. She will double that when she is five years old. I have five more heifers from Duke that will freshen in the fall and they are all beauties. I tell you that bull will put me on Easy Street, if all signs don't fail."

### BUTTER SCORING CONTEST.

N. P. Sornsen, Lynden, Wash., Secretary Creamery Operator's Association, announces that the first contest for this season will be held at Pullman, June 4. Creamery operators are invited to send a 10-pound tub of butter for the contest. Prof. Frevert, of Utah, will score. This affords a valuable lesson to those who wish to know in what particular they can improve.

### PROFITABLE EGG MARGIN.

Last year H. G. Corp of Forest, Wash., kept from 60 to 75 hens and sold eggs for \$240, besides what was used for hatching and for family use. Chickens are worthy of more attention than is given by the average farmer in this country. By planning a little ahead most of the feed can be grown and the markets will average a very fair price. Last fall Mr. Corp sold four cases eggs for \$48.



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Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

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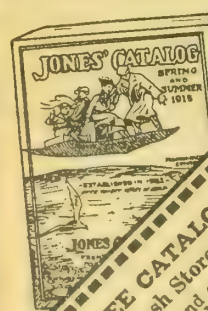
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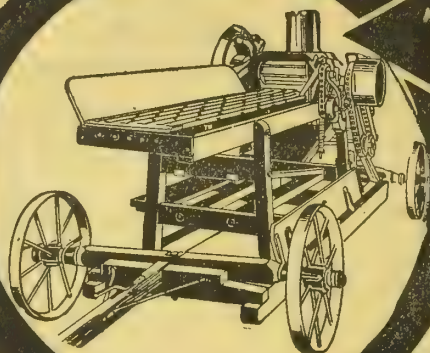
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# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH.,

JUNE, 1915

JUN 22 1915

No. 6

## Dairy Interests at Chimacum, Wash.

A visitor to the famous Chimacum Valley can hardly fail to be impressed with the large commodious barns and the excellent pastures, which are conspicuous when entering the valley. Evidently the dairymen in this district who are all making a success of this industry, believe it is essential that ample protection from rains and inclement weather is afforded the live stock. The essential feature in all these barns is the large roof and ample space for hay and grain near the center, with stalls surrounding near the outer walls. As a rule there is plenty of light and ventilation. Most of the barns are built with perpendicular boards, not battened, and it would seem at first glance that the stock would be subjected to considerable draft, but the volume of air in a large barn is so great it is not easily displaced by that which enters through the many small crevices. The good health of the cattle in this valley is evidence that their method of sheltering is very suitable to that locality. Apparently their roofs spread over so much ground, all the live stock raised and all the implements required can be put under shelter when necessary. The ample roof feature is an essential for successful dairying in the Coast section of Washington which many other dairymen who would succeed will do well to heed.

Next the abundant pasture. There is scarcely a time throughout the year but grazing is available. The soil a mixture of loam, clay and sand is similar to that of many other valleys of the Coast section, but the grass is a mixture composed largely of the native misquit (one of the bromes). Also other brome grasses, rye grasses and a small proportion of clover. The seeding evidently is generous and it pays well. Some hay and oats is raised but alfalfa hay and the concentrates are brought in from outside. The aim in this district is to produce all the pasture that is possible, hay raising and grain growing being of secondary consideration.

### Bishop's Dairy Demonstrations.

A finished product complete in the most highly perfected and standardized form that is possible for a dairyman to attain in every department of the dairy industry has been the aim and is the accomplishment of Mr. Wm. Bishop, of Chimacum.

When about 15 years ago Mr. Bishop realized that logging and lumber manufacturing was a declining business, he put heart and soul into the



A World's Record Milker at Chimacum, Wash., bought out by Chas. Eldridge

development of the dairy industry, adopting such policies and plans which could not fail of success. His farm comprises about 1200 acres, a large proportion of which is in the Chimacum Valley, considerable of it under cultivation and in pasture. From a start of only a couple of registered Holstein cows, he has developed a registered and pure-bred herd, including calves, of 250 head, besides 100 head of high grade cattle. In the every-day milking herd there were 120 cows in the early part of June, with a constant number coming fresh throughout the year. Most of the cows have to undergo the 7-day and 30-day tests, and future operations of feeding and breeding are figured for each animal accordingly. At present there are 15 in yearly test—mostly 2-year-old heifers, whose records will show from 600 to 900 lbs. of butter a year. One of the high record animals on this farm is Chimacum Wayne 2nd, the daughter

of Chimacum Wayne Boone, whose record is 33.7 lbs. butter in seven days, 137.26 lbs. 33.7 lbs. butter in 7 days, 137.26 lbs. in 30 days. There are over 75 A. R. O. cows in this herd, 60 milking over 75 lbs. per day, and 6 producing over 100 lbs. milk a day.

One of the herd bulls is Quernus Cornucopia, whose 2-year-old daughters have yearly butter records of 600 to 900 lbs. The famous young bull Sir Chimacum Wayne, in this herd, has sired 20 calves, all ideal in type and health. Another young bull in this herd is King Korndyke Molly, a 16-month son of King Korndyke Sadie Vale, whose dam made 41.06 lbs. butter and his sisters 38 lbs. butter in 7 days.

A creamery and a cheese factory is located on this farm and when market prices for butter or cream are not attractive more cheddar cheese is manufactured, but the local butter trade is about 300 pounds a

day, and in the early part of June 30 cases of cheese of 110 lbs. each was made per week.

A concrete silo of 180 tons capacity erected at a cost of \$650 is giving excellent satisfaction. Either vetch and oats or peas and oats are good silo crops here. A new office building has just been completed at a cost of \$700, and a modern, well-lighted and beautiful home costing \$3500 is in the finishing process.

Mr. Bishop's place is an ideal farm factory. Raw materials of forage crops, most of which are produced under the tempered humidity of Puget Sound, and a part through the influence of irrigation and a hotter sun in Eastern Washington, is fed to registered cattle whose offspring is constantly selling at handsome figures. On March 17th, 18 head placed on public sale at Snohomish were taken over by purchasers at an average price of over \$333 each, or \$6005 for the lot, being buyers' own valuations on that kind of a finished product. For one of his young sires whose dams and granddams on both sides average a higher record of butter fat than for any other bull of this breed, Mr. Bishop has received an offer of \$5000 by a leading Holstein breeder in New York state. The Hammond Lumber Company Mills City, Oregon, recently selected a fine bunch for a foundation herd. Every day in the year there is a handsome profit from butter and cheese of the highest scoring quality. High ideals, persistent efforts, and accuracy together with good judgment in breeding and feeding are some of the main qualifications which have contributed to the grand success in the development of this famous farm factory of Mr. Wm. Bishop.

### HOME INVESTMENTS.

It might be a good thing for the United States and for the bankers of this country to restrict lavish loaning of money to nations now at war. Some years ago the Pacific Coast banks were offered 4 per cent. by bankers in New York. The offer was tempting enough to cause a considerable transfer of coin, which it was discovered shortly afterwards, ought to have been kept on the coast. Home investments ought to be the best and safest. We can make them so governing operations accordingly if we will.

The corn crop is developing well on the coast at this season of the year. Milk, pork, beef and eggs will be produced from a greater proportion of home grown feed this fall than ever before.



A good Dairy Herd on Whidby Island, Wash.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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J. L. Stahl, Horticulturist.

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S. B. Nelson, Veterinarian.

Governor Lister, when addressing the State Grange, said that one reason for high taxes is that the people are placing an increased number of duties on the state, creating more offices to be filled by salary drawing officials. It is time now to plan for a halt on the development of this state machinery. Too much regulation is curtailing our industries, causing both skill and capital to become inoperative, while every individual property owner bears too much of a tax burden.

The copious rains during May and early June have caused good forage crops in the coast section and most of it has been saved, either pastured or made into silage. The second planting made this month practically assures two good crops this season.

Commission merchants in Washington are now required to execute a bond in the sum of \$3000. This it is thought will serve to standardize the business, segregating those who assume the position of agents for the public and those who buy and sell outright, and it will serve to weed out irresponsible parties.

Vashon Island is becoming famous for its registered Guernseys. Secretary Caldwell, on his recent trip to the coast, paid a high tribute to the Shipley herd, estimating the quality as of the very best to be found in the United States. Several dairymen on Vashon are preparing to raise Guernseys of this type.

The Washington State Grange, which closed its annual meeting at Centralia recently, has no notion of giving up its position as guard to see that the laws prohibiting the sale of liquor is upheld and enforced.

Farmers in the coast section who wish to fatten up any young cattle quickly will do well to feed cottonseed meal in connection with grass pasture or with silage made from clover, pea and oat crop, or a barley and pea crop, clover or corn, in fact

any good ensilage crop. Do not feed too heavily of the cottonseed meal at first nor is it safe to feed more than 7 lbs. a day at any time.

Good farming principles always involves the manufacture of some standard product at less average cost than the price for which it is sold.

In many sections there is good haying weather. Large crops of alfalfa is being harvested and bailed in the irrigated districts of the Pacific Northwest.

## GRANGE AND RURAL CREDIT.

The Washington State Grange demands a good rural credit system. There is nothing to prevent the enactment of proper rural credit laws when the members of the grange and the farmers decide what is wanted. The grange as a body has not shown much skill in handling financial problems in this state, but when some trustworthy individual or a body of men thoroughly posted on the subject is appointed to devise plans, then the grange and the rural people generally can get what they want.

## LIVING WITH GREATER COMFORT

In this commercial age the pace for the possession of many modern conveniences is becoming too strenuous. Live within your means is a good rule to practice. On the other hand those who produce or create something of merit, fixing a standard brand and continue in the line of a chosen avocation can hardly fail to accumulate the necessary conveniences and even luxuries sufficient to make living very comfortable.

Great responsibilities are being thrust upon the people of the United States during this world's war. This country must justly feel emulated with President Wilson as leader in diplomacy. Financially we are becoming lender instead of borrower. As a nation we are in better position to exemplify the golden rule than any other country and right action on the part of this government cannot fail to be richly rewarded. As individuals it is our privilege to accept responsibility and we can best render the highest measure of service by conforming to the only true standard of living.

## ROOT-KNOT DISEASE DIFFERENT FROM CORN GALL.

Plant pathologist H. L. Rees of the Western Washington experiment station, Puyallup, states in a letter to the Horticulturist that the root knot, or nematode disease, is not the same disease as crown gall. The author of the press bulletin from which the article was selected used the names of both these terms rather inferring that either root knot or crown gall was produced from the nematode infection.

## THE FARM FACTORY.

Rising prices for grain and falling markets for eggs, butter and meat last spring was an awful bitter pill for quite a number of producers to take. This unexpected experience is proving to be a blessing in disguise in a good number of cases. It caused better than the average preparation of the soil, better seedling and much larger crops are grown

than the owners thought possible a year ago. In one case at least, a poor sandy, upland, logged off piece of land is producing two splendid crops this year, a vetch and oat crop and a corn crop all made into silage. The farm factory, after all, is a valuable asset.

## DAIRY INDUSTRY IMPROVING.

Aside from the tuberculin question, the depressed condensary markets and high cost of concentrates, the butter and cheese market is not much out of balance for this time of the year. Leading dairymen are quietly on the lookout for some high record producers, both in young cows and heifers. During the last six months dairymen of the northwest have been more impressed than ever, of the true value of registered sires whose records are satisfactory. There is also a substantial movement on foot to improve the grade of cream and butter brought about by the better sanitary conditions prevailing on the dairy farms. There is a general upward trend in the dairy industry.

## GOAT, HOG AND CATTLE FARM. Angoras With Large Clip.

J. Hanks and Sons, Ellensburg, Wn., have an angora goat (doe) which clipped 10 1/5 pounds fleece this spring, a buck yielded 5 pounds and several kids each sheared 6 1/2 lbs. while an entire flock of 23 averaged 5 3/4 lbs. mohair each. The price offered at Portland was 31 cents per pound.

Besides the value of the fleece is the meat, the increase and the usefulness of the goats as browsers to devour weeds and foliage of underbrush. Properly handled there is a nice margin of profit in a flock of goats and particularly are small flocks of value preparatory for any land clearing on either side of the Cascade range.

Some shelter is provided for protection during inclement weather, and when the browsing crop is not available other feed such as sliced roots and alfalfa is given but the feed bill is not a large item.

Besides his large flock of pure bred Angoras, Mr. Hanks raises Registered Duroc hogs which make fine marketable porkers at 6 to 8 months of age.

The basis food ration is 2 parts barley, 1 part oats, ground and soaked in milk for about 12 hours. Some alfalfa and a little corn, available at times, also serves to make the rapid gains with the slick smooth finish so tempting to hog buyers.

In the dairy herd transformation from high grade to the Registered stock is gradually taking place, having several cows of Registered Jerseys from the Stevens herd and Registered Holsteins from the Todd herd which are making excellent records.

During the past few years a good foundation has been laid for high records in live stock breeding and the close attention given to the farm and to the development of high class stock is likely to win further prizes for the junior members of this firm should they gain appear in the show ring.

## HORTICULTURISTS AT THE EXPOSITION.

The Panama-Pacific and the Panama-California expositions at San Francisco and San Diego will be especially attractive throughout the

season to horticulturists, perhaps of greater interest than to those engaged in other industries. Every kind of plant known to cultivation and horticultural products of every known description and in the most perfect form are to be seen at these expositions. During the latter part of August and early September great congresses of the different branches of horticulture will meet at San Francisco and Oakland with dates in close proximity. On August 12-13 is the meeting for Pacific Coast Association of Nurserymen, August 13-14, California Association of Nurserymen; August 17-18, American Rose Society; August 17-20, Society American Florists and Ornamental Horticulturists. Same date National Association of Gardeners; August 18-20, American Association of Park Superintendents, and August 23-25, The American Pomological Society will meet at Berkeley.

These gatherings afford opportunity for those engaged in the different branches of horticulture to become more closely associated for their mutual interests in the upbuilding of their avocations. Standardization has become the watchword in this commercial age. In production there is a constant endeavor to grow fixed and uniform types. In grading and packing, adherence to certain strict rules produces best results. In the matter of laws and regulations governing trade and inspection, uniform action to govern is the end being sought. There is great opportunity for progress along these lines at these expositions and particularly for horticulturists will the events during the latter part of August at San Francisco be valuable and enjoyable, while affording opportunity for service that may be far reaching in the proper adjustment of production and trade. Many of our readers are preparing to attend the horticultural meetings and the stock show at a later date.

## ROOT CROPS.

Many kinds of root crops can be grown in the Northwest, particularly in the Coast section. Any farmer having a small piece of fertile and well prepared soil will profit by an increased quantity of feed from a seedling of some good turnip during the summer months. In some cases large crops have been grown on newly cleared land.

Mr. Thos. Nesbit, Chimacum, Wash., has a number of young cows on test which are making high records. Negotiations are being made for a bunch of his heifers which are out of high producing stock.

On May 27-28 the Pembroke Investment Company, on Vashon Island, Wash., put an excellent crop of oats and peas into the silo, first running it through a Hocking Valley ensilage cutter, then tramping it firmly. The season is a little earlier than usual, and Manager Davis immediately procured some good seed corn, planting some of his ground for a corn silage crop to be cut in October, which he says can be done in time to reseed with peas and oats in November for next spring's cutting, thus getting two good silo crops a year on logged-off land. This demonstration is a good and safe example for other dairymen of the Coast section.



### CO-OPERATION FOR FINISHED PRODUCTS.

The dairymen at Chimacum, Wash., are working concertedly and harmoniously together. It is one of the communities where a visitor finds the pleasing sentiment of neighborly emulation prominent. In too many localities a stranger can hardly enter a home before he learns of omissions and transgressions of adjoining farmers in the district. Not so at Chimacum. Here the dairymen are not slow in telling of the good qualities of each other's stock, nor in withholding credit where justly deserved. It appears that the farmers here are too much occupied in seeing each other's merits to have time or room for fault finding. This is indeed a valuable asset for a community from a financial standpoint as well as for their own satisfaction. Before many years Holstein breeders in this valley will be able to hold public sales of their own which are likely to attract buyers from long distances. Co-operation for the manufacture of products in most highly finished forms is practically carried out here.

### PROFITABLE HOG FEEDING.

When pigs are growing fast or during their first 90 days the flesh and bone producing foods should predominate, such as grass pasture, skim milk and tankage.

Some ground grain is also beneficial to make them shapely and compact. The ground grain, whatever kind the farmer is able to obtain most cheaply either corn, barley, wheat, or a mixture of these gives best results when soaked for about 12 hours.

For about the last two months before the pigs are put on the market is when the fattening, or "fitting" process takes place.

Wm. Hislop Animal Husbandman, State College, gives the following suggestion on this stage of Profitable Hog Feeding in Bulletin 87, as follows:

On the average it takes about 555 lbs. of corn, 535 lbs. of whole wheat or 525 lbs. of barley per 100 lbs. gain on thrifty, well-grown shoats. At the Nebraska Experiment Station it was found that 421.5 lbs. of ground wheat and one part of tankage. Pigs can be fattened and marketed on a shorter feed with ground wheat and tankage than with whole wheat and tankage or whole wheat alone. Where it is not practicable to grind the wheat, a small amount of tankage fed with the whole wheat or barley will materially increase the rate of gain and the profit obtained. When wheat is very hard, it pays not only to grind it, but to soak it. Better results are obtained with ground barley than with rolled barley, the latter being too bulky for hogs.

It is not possible to make a balanced ration with barley, wheat or corn alone because each one of these grains furnishes a one-sided diet rich in carbohydrates (starches and sugars) and fats, but deficient in protein and ash (muscle building and bone forming). No animal suffers so severely from lack of protein and mineral nutrients as does the hog. and 20.74 lbs. of tankage were required for 100 lbs. gain, the two feeds being mixed in the proportion by weight of 19 parts of ground wheat. This is due solely to the prominence



One of the cows which has made the Monroe Company, Spokane, famous, affording for them a high measure of profit. The experience of this firm is worth much to other dairymen.

of cereal feeds in its ration. Farmers in this state are experiencing difficulty in maintaining "scale" and bone in their hogs, which is doubtless due to their use of too little else than the cereals in the hog's ration. The profitable feeding of wheat, barley or corn requires that the feeder consider the protein and the mineral supplements. The feeding of wood ashes, charcoal and corn-cob ashes is of decided benefit, but they are not sufficient to supply all the mineral nutrients required.

Wheat middlings, linseed oil meal, soy beans, wheat, bran and corn are unsatisfactory sources of lime for growing swine. When skim milk or meat meal is fed to pigs they will store from nine to ten times as much lime as from any single grain ration. Some brands of feeding tankage contain more than twenty per cent. of ash, most of which is bone. This bone furnishes calcium and phosphorous in available form, and is a useful component of the feed. Precipitated calcium phosphate, made from bones in the process of gelatine manufacture, is quite readily digested and relished by hogs. In Washington floats are cheaper and almost as effective. Forbes of the Ohio Experiment Station states that a "meat meal containing phosphorous in this form would leave little to be desired in the way of a complete supplement to corn for hogs."

### MARKETING.

By T. N. Carver, of U. S. Department of Agriculture.

Four accomplishments must precede the actual selling of a product if the best results are to be secured, and each of these accomplishments calls for organization. They are:

(1) The improvement of the product. This ought to be one of the first results of co-operation. A group of farmers, all interested in growing the same product, by meeting frequently and discussing the problems connected with the growing of that product, will normally educate one another and

thus improve their methods of production.

(2) The standardization of the product through organized production and marketing. Standardization follows naturally and easily if the co-operators are wise enough to see its importance. Not only must the product be a good product, but it must be graded according to the tastes or desires of the consumers or ultimate purchasers. If the producers insist upon throwing an unstandardized, non-descript product upon the market, the consumers, each one of whom wants a small and simple parcel and wants that to be of a certain kind and quality, will never buy of the producers. Some one, then, must intervene to do the grading and standardizing.

Individual growers, except where they produce on a commercial scale, are usually unable to grade their own products sufficiently to satisfy the trade. Their products should be pooled and the work of grading should be under the control of an organization whose employees have no personal interest in the goods. Such an arrangement makes it easier to secure an absolutely honest and uniform pack. In this way, too, producers will be able either to sell directly to the consumer

or so to reduce the toll charged by the middleman as to enlarge their own profits.

(3) Branding. An excellent product, graded and standardized, must then be so branded or trade-marked as to enable the consumer to identify it or recognize it when he sees it. That is really all there is to the stamp on a coin. It adds nothing to the intrinsic value of the metal, but it makes it circulate. Without such a stamp each individual would have to weigh and test a piece of metal which was offered him and the circulation or salability of the metal would be greatly restricted, but a stamp upon it which the average receiver recognizes at once and in which he has confidence makes him instantly willing to accept it. This may be an extreme case, but it does not differ in principle from the stamping of any other salable piece of material. A private stamp is quite as good as a Government's stamp if people have as much confidence in it as they have in a Government stamp and if it is as reliable and as uniform. Private coins have circulated many times in the past. However, without taking such an extreme case as the coinage



Progressive farmers are trying to make their hogs average a pound of gain each day, anticipating good prices this fall.



of metal, except by way of illustration, it will not take much argument to convince the average person that if a box of apples bearing a certain stamp or trade-mark gets to be known as reliable and good all the way through, the producer or the producing association whose stamp has thus gained confidence will be able to sell where unstamped products equally good will fail altogether.

(4) Education of the consumer. The consumer must be educated as to the meaning of a stamp or trade-mark on goods which are excellent in themselves and uniform in quality. This may call for some form of advertising which can be financed effectively only by an organization.

Let these four things be done and the problem of marketing will become fairly simple. But it must be remembered that these four things can be done only by organization.

### FRUIT BY-PRODUCT QUESTION.

The committee on by-products of the Northwest Fruit Growers, resulting from the convention held at Spokane last season, have given some very pertinent suggestions in their report, applicable to the various fruit districts of the Pacific Northwest, from which we give these timely hints.

Communities must be made to realize the necessity of having a careful survey made of the amount of fresh products tributary to the by-product plants, of the cost of construction and operation of the plant, of the proper location, water supply and machinery needed for the best results.

The forms of capitalization and the amount of capital needed, together with the management of the plant, the selling of the manufactured goods, the unit of cost and the overhead charges must be thoroughly looked into before any community should start any such a venture. The services of expert, unbiased advisors to look into local conditions should be available in the opinion of this Committee.

The Committee believes that the plant should combine, the cannery, the evaporator and vinegar works, in many cases, for the reason that different grades of products may be

handled more economically in this manner. The longer season of operation is brought about in this way, which lessen the cost of labor, the overhead charges and the unit of cost on the goods manufactured.

Realizing that the lack of proper grading of our by-products tends to demoralize the markets and destroy the profits of the grower, the Committee feels that this is one of the most important fields for constructive work in the by-products business and recommends that any permanent marketing organizations which may be formed make this one of its earliest problems for solution.

The Committee is unanimous in its conclusion that a central by-products organization is necessary for the salvation of our fruit and vegetable industry.

### GRADING AND PACKING BERRIES.

Grading and packing rules for raspberries, Loganberries and blackberries adopted by the Northwest Fruit Shippers Council for Oregon, Washington, Idaho and Montana include the following:

Pick raspberries and loganberries under a light pink and firm. Blackberries when dark red, or black but firm.

Berries that were overlooked on previous picking which are over-ripe must be put in a separate box and must be used for local consumption or canning or drying.

Don't rehandle raspberries, loganberries or blackberries to sort them, as they are too delicate. The grading must be done by the pickers.

The berries are sure to settle unless the cups are properly filled. See that the berries are settled at the corners and that the cups are rounded up about five-eighths of an inch above the top before putting the cups into the crate.

Have your crate made five-eighths of an inch higher than the top of the upper layer of cups. If the top of the crate is too low, put a cleat under the cover. Don't mash the berries when putting the cover on. Mashing the tops of berries starts mold and seriously injures the appearance and quality of the berries when they reach the market.

If you do not have enough pro-

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duct to load cars daily, try and arrange with a neighboring district to join in loading cars.

If on account of bad weather or a shortage of help, you are unable to pick your berries at the proper time, make the next picking clean and turn that picking into the cannery or dryer. This will give you a clean start for picking for shipment.

A few over-ripe berries will start mold and ruin a whole box or an entire crate.

The range of markets extends to Vancouver, B. C., Winnipeg, Duluth, Minneapolis, Chicago, Omaha, and Kansas City, and the fruit must be packed and loaded so it will reach these markets in good condition.

By complying with these instructions a standard will be established whereby buyers can safely order cars of berries from us at an f. o. b. price which will otherwise be impossible.

### CANNING WITHOUT SUGAR.

More or less sugar is generally used in canning any kind of fruit and many are under the impression that a certain amount of sugar is absolutely necessary to keep canned fruit in good condition. In many cases excessive quantities of sugar have been used which seems to detract from the natural flavor. This has been noticeable with prunes. Some years ago the Italian prunes grown in the Pacific Northwest were sweetly canned quite extensively in the homes but the consumption decreased. Of late years the canning of this delicious fruit is done, using much less, and in some cases, scarcely any sugar, and now growers find that the demand for Italian prunes at canning time is on the increase. The fact is that most fruits can be put up to keep well in cans with little or no sugar and in most cases the natural flavor is the better retained with less saccharine. The U. S. Department of Agriculture also directs attention to this fact for the reason that sugar is high in price and indications are that it will not be reduced materially this season. Canning Peaches, Prunes and Apples.

The Department recommends the following recipe for canning peaches without sugar:

Remove skins from peaches by immersing in boiling water for about one minute and then dipping in cold water. Place whole peaches in glass jars or tins and fill jars with hot water. Place rubber and top in place and sterilize for 15 minutes in hot water bath outfits, 12 minutes

in water—seal, 10 minutes at 5 lbs. steam pressure or 5 minutes at 10 lbs. steam pressure.

Of course the peaches when removed from the jar will not taste so sweet as those canned in syrup. However, if sweetening is desired it may be added when the fruit is to be eaten. Prunes may also be canned in that way.

Apples may also be canned (for apple sauce, pie filling, etc.), using plain water instead of a sugar syrup. Department specialists have repeatedly canned them by this method. In the case of apples, jars should be sterilized 16 minutes in hot-water bath outfits, 12 minutes in water-seal, 10 minutes under 5 pounds of steam and 4 minutes under 10 pounds of steam.

### METHODS OF CANNING.

The U. S. Department of Agriculture will shortly issue under the title "Methods Followed in the Commercial Canning of Foods" a professional paper of 79 pages which gives the results of extensive studies of factory methods. The bulletin devotes chapters to the following: Modern factory equipment and methods; containers; the label; use of the term "canned"; spoilage; effect of heat and cold; cost of canned foods compared with fresh; extent of the canning industry in the United States; packing seasons; experimental work; detailed consideration of the various products.

These chapters give details of the processes used in preparing different types of sirups and in handling all of the common fruits and vegetables which are canned in commercial quantities. It also devotes some space to the canning of shrimp, crabs, fish and oysters, and to such canned specialties as string beans, hominy, sauerkraut, and soup.

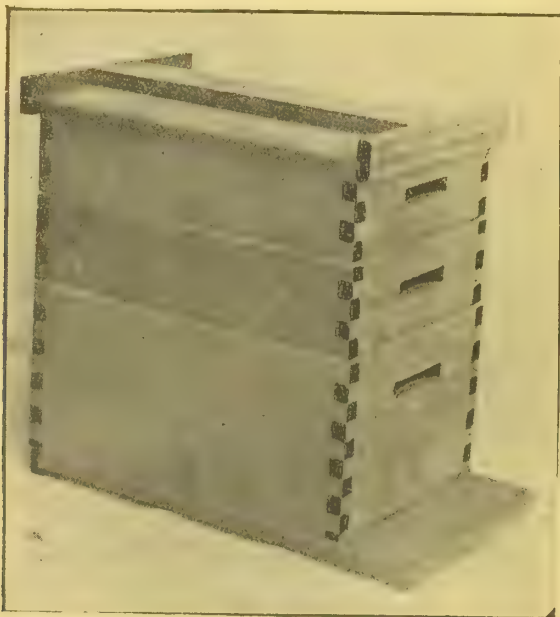
The information is stated in a technical way and deals only with the preparation of foods with factory machinery and in large quantities. It does not deal at all with household canning processes or appliances.

The bulletin can be obtained from the Editor and Chief, Division of Publications, as long as the Department's supply for free distribution lasts. Thereafter it can be purchased from the Superintendent of Documents, Government Printing Office.

### CABBAGE MAGGOT.

R. P., Argyle, Wash., makes inquiry about cabbage maggot and a remedy.

Reply: The cabbage root-maggot is the larvae of a small fly which de-



Cedar Bee Hives made by Brew Mfg. Co., Puyallup, Are Popular Throughout the Northwest.



posits eggs in crevices of the soil close to the stem of plants, hatching in a week or ten days. The young maggot immediately burrows along the surface of the young roots and later into the main roots, completing its growth in three to four weeks.

This pest has been very general in the coast section of Washington during the past three years. The late Mr. A. G. Tillinghast, of LaConner, found carbolic emulsion very effective.

This is made by dissolving one pound of hard soap in one gallon of hot water. After the soap is dissolved add one pint of crude carbolic acid, then agitate the mixture until an emulsion is formed. When ready to use dilute with thirty parts of water; pour a small quantity, about half teacup full close around each plant. Where a large field of cabbage is to be treated a barrel is prepared to contain the solution mounted on a light wagon, and a hose is fastened to a tube and inserted into the bottom of the barrel from which the liquid flows by gravity. At the other end of the hose is a half inch gas pipe attached about 5 feet long.

The quantity of liquid for each plant is easily obtained by the operator who takes his place beside the wagon, treating one row at a time. For a small quantity the liquid can be poured from any vessel having a small spout.

#### SPRAYING WITH ARSENICALS FOR CATERPILLARS

Tent caterpillars are readily destroyed by arsenicals sprayed on the foliage of trees infested by them. Any of the arsenical insecticides may be used, as Paris green, Scheeles green, arsenate of lead, etc. The first two are used at the rate of ½ pound to 50 gallons of water. Milk of lime

from 2 to 3 pounds of stone lime should be added to neutralize any caustic effect of the arsenical on the foliage. Arsenate of lead is used at the rate of 2 pounds to each 50 gallons of water.

#### CHERRY PICKING AND PACKING.

Cherries should be ripe and dry when picked or they go down quickly when sent to market. Mr. H. A. Bassford, a leading cherry grower in California provides for his pickers semi-circular cans with concave sides which are hung over the shoulders of the pickers, so they can use both hands for picking. When filled the cans are emptied into baskets about a foot square on top and nine inches square on the bottom and a foot high with rope handles. These are filled not quite full, and are then taken to the shady packing benches where girls pack them in ten pound boxes, marked, "Net weight 8 pounds," on account of the shrinkage on the journey. The number of rows across the box is also marked on the outside so the buyer will know the size of the cherries without opening them. One row different will often make a difference of 50 cents in the price per box. Some of Mr. Bassford's cherries are packed in tin top baskets, stamped, "Net Weight 5 pounds." It is always necessary to have overweight rather than underweight on account of the net container acts in some states.

For the local markets cherries are often shipped in 20 pound boxes which reduces cost, both of box and of packing. Buyers are more particular to have cherries sound, ripe and free from mould than they are about the facing. The price for picking varies from 1 to 1½ cents per lb.

## AGRICULTURE

## The Basis of Prosperity

#### HOGGING OFF VARIOUS CROPS.

##### Reducing Cost of Producing Meat.

By C. L. Smith, agriculturist of the Oregon-Washington Railroad Navigation Company.

Careful investigation on many different farms shows that the average cost of harvesting a crop strated by numerous experiments that the pig can do the harvesting of various crops without wasting any food material.

It follows logically therefore that

up to the extent that the pig can do its own harvesting there is a saving of 50 per cent on the cost of each pound of meat produced from an acre of ground where the pig does the harvesting.

Pasture grass to the extent of one-half the daily feed is probably one of the cheapest class of pork-making material. Next to this, comes any of the cereal crops—such as rye, wheat, barley, oats, peas or corn, to be hogged-off.

The farmer who will arrange such a system of cropping as will enable

him to hog off the various crops at the right season, can very materially lessen the cost of pork production. The best permanent hog pasture is a combination of grasses and clovers including alfalfa. Alfalfa alone is not a satisfactory or economical hog pasture.

The earliest annual crop with which to supplement the pasture is peas and oats, of which enough should be seeded to take care of the pigs until winter wheat is in the dough. March furrowed pigs that have had a slight grain ration each day in addition to the pasture, will be in condition to make very rapid gains in fact more pounds of meat per acre than they would be able to do from the same amount of wheat harvested threshed, rolled and fed in the most approved manner.

Barley allowed to stand in the field without harvesting, will produce more pounds of pork per acre during the fall and winter if the pigs do their own harvesting, than will the same amount of barley threshed, rolled and fed in the house or feed lot.

Ordinarily it will be found advantageous to give the pigs every evening a light feed of some other kind than that which is being hogged-off, for it is a well recognized fact that other things being equal, the greater the variety in the ration the better will be the results from each pound of feed fed.

If in hogging-off, any kind of crop, portable fence is used and only so much of the area uncovered at a time, as the pigs can clean up in three or four days, there will be less waste and better gains from the same area than where they are allowed to run over the whole field. The manner, however, in which the hogging-off is done must depend in a great measure upon the location of the farm, fencing, labor, water and other factors that must be considered, but it has been demonstrated beyond the possibility of a doubt

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#### OFFICIAL DENIAL

**NO WAR TAX ON HOMESTEAD LAND**  
in Canada—The report that a war tax is to be placed on Homestead lands in Western Canada having been given considerable circulation in the States, this report has been placed, and there is no intention to place a war tax of any nature on such lands. (Signed) W. D. SCOTT, Supt. of Immigration, Ottawa, Can. March 15, 1915.

that up to the extent that the pigs do their own harvesting, the cost of producing the meat is reduced about one-half.

## FENCES

Pupils in the Horticulturist school are self graded. No teacher says to one "You will be in the fourth grade" and to another "You will be in the eighth grade," but each chooses for himself or herself. So I give warning that this article is for the kindergarten.

Thousands of people from the cities and from the far East are settling on Washington "stump land" farms. Many have little money and less experience. It is for these I am writing. If you are one of them, take this article out on the back step, where no one can see your confession to being a "tenderfoot" and let's talk about fences.

Of course if you had money every-



Sample of convenient portable fence used in Hogging-off various crops. 16 foot panel, 3 feet high with support. Requires 8 pieces 1x4, 16 feet long.



thing would be different—including this talk.

As you haven't money you want something cheap—which means, say, a brush fence.

Some will tell you never to build a brush fence—they told me that. But as I needed a fence and had neither time nor money—why, I went out and made a brush fence.

I cut the alders and underbrush from a strip a rod wide, piling them in a windrow some six feet wide and as many high. Of course it would not do for a hog fence, but it kept my cows in and my neighbors cows out for five years; then I burned it and had a nice clean strip for my new fence.

A barbed wire fence is, next to a brush fence, the cheapest, and (for horses) the worst. But if you are poor, and the fence row is ready a barbed wire fence is certainly cheap.

One great objection to a barbed wire fence is that it is hard to move—but if you are poor you are used to hard things.

For pulling staples a split cold chisel, shaped something like the claw of a claw-hammer, is a great convenience. A big flat-pointed spike, about 7/16ths of an inch in diameter, slightly bent at the point, is also convenient—costs half a cent.

For transferring the wire from the old to the new fence, if the ground be smooth, hitch one wire behind a wagon or long sled and drag it. A team will haul sixty rods of barbed wire. Take one strand at a time, for tangled barbed wire had not been invented when Job was under trial.

If the ground be not smooth, roll on a barrel, or else start a coil and by "zig-zagging" around itself you MAY be able to roll up the wire and then unroll it without trouble. Again it may refuse to come off regularly. For my own use I made a handle by fitting a crank (with two elbows and three pieces of 1/4-in. gas pipe, the handle being six inches, the crank 12 inches and the long piece three feet.) In the long piece, ten inches from the angle, I bored a 3/16-inch hole. Into this hole I slipped a piece of baling wire 18 inches long, giving it a couple of turns. The other end of the baling wire I fastened to a wire reel, such as barbed wire comes on. Then holding the long piece with my left hand and having someone else hold the other end of the long piece, I reeled up the barbed wire as we walked along. Sixty to eighty rods will make a reelful, as it can't be wound so tight as in the factory. After hauling to the new fence row, it is loosened from the baling wire and, with a piece of board held in the left hand for a brake, two of us merely walk along and the wire unrolls itself. In unrolling, let the wire leave the reel on the under side, if there be grass or weeds.

Nine wires, the first three inches apart and the last six inches apart with posts and stays four feet apart make a good boar's pen—but a trifle slow to move.

When you come to build a permanent outside fence you are supposed to have both money and experience—so we will omit that part of the lecture. For temporary, or inside fences (for all inside fences should

be temporary) everything will depend on what stock you are fencing for.

For hogs three feet is plenty.

Many recommend woven wire fences, but my hogs go under woven wire unless pegged down every few feet—a great nuisance for a temporary fence. Also wire that touches earth soon rusts out.

My first panel fence was to stand alone—a "worm" fence—but I now have panels wired to driven posts. The worm fence took up too much room; blew over; could not be curved without extra parts.

However, you may want to try it and I give directions for making the panels. In any panel fence use only fourteen foot stuff. Twelve is too short and sixteen is too "wabbly," unhandy and heavy.

Use four inch stuff, five boards to the panel. Six inch stuff is too heavy and the cracks are too wide if four boards are made in a three foot panel.

Five boards, with two end pieces at one end and a long and a short end piece at the other end, with a diagonal brace, will make about two feet of boards to the running foot of fence. Set up "worm" fashion this makes over two feet to the foot of fence line. Lumber costs delivered about a cent a foot, so the fence costs, besides the making, about 35 cents per rod.

Lay your five four inch boards down parallel; the top and bottom boards ten inches farther to the right; the middle three boards ten inches farther to the left. Nail two cross pieces on the right hand end; the one at the end of the top and bottom boards on TOP and the one across all five boards BENEATH the boards.

At the left hand end, nail a piece on TOP of the three middle boards and BENEATH all five boards. Make all panels in this way.

To set up: have someone hold (or if alone, prop) the first panel, USING THE END WITH THE THREE PROJECTING MIDDLE BOARDS TO BEGIN WITH. Then take the second panel, and standing at the proper angle, tilt the panel so that the cross piece at the end of the three boards will slip up in the opening of the first panel; raise till bottom of cross piece slips down back of bottom board; crowd around till snug, and set down on ground.

I forgot to say that half of the panels must be made as directed and half just the reverse; one being the right hand panel and the other the left hand panel.

A man and team with a sled or low wagon will move a third of a mile of this fencing in a day.

However, for the reasons stated above I did not like these self-supporting panels, and finally knocked the panels apart, remaking them into regular fourteen foot panels with a cross piece at each end and a diagonal brace in the middle.

To set up I drive a post at the end of each panel, wiring the two panels to it. I find it very difficult to get hired men to make the posts small enough; 3 inches by 3 inches is quite large enough. Posts wear out by being split on the top; not by rotting or being broken off, and the small post lasts much longer than a larger one. Men want to make

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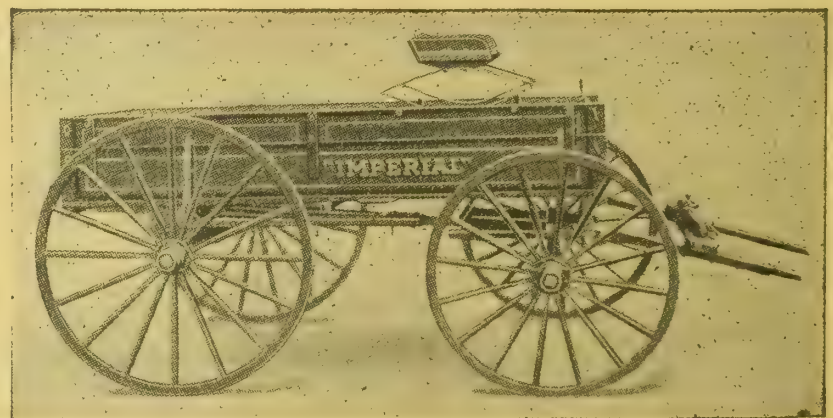
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### Steel Axle One-Horse Wagon



This Wagon conforms to the standard set by manufacturers of high grade Wagons and is the equal in every way to the best on the market. A critical observation of the Imperial from every standpoint will convince anyone that it is strongly constructed, heavily ironed and well finished.

One and one-fourth inch solid collar steel axle.  
Savven patent Wheels, made of the very best grade White Oak Stock with rims riveted on each side of the spokes, 2x3/4 inch steel round edge tires, bolted.  
Double bed nine feet long with spring seat.  
Heavy, well-ironed bent heel shafts, instead of straight heel as shown in illustration. Price ..... \$49.50  
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them 6x6—which are nearly worthless.

Have the point long, say 14 inches. This drives easily and saves both posts and labor. Most men sharpen a post too blunt—6 inches to 8 inches for a point.

Drive with a 30 lb. maul—heavier if you can manage it. The larger the maul the easier on the top of the post. I am speaking of cedar. Fir posts may be smaller than 3x3.

A 3x3 post will last longer than I want a fence in one place. I fence for hogs. For cows a higher fence may be needed, as some of your cows will be sure to laugh at a 3-foot fence; and of course for a higher fence a larger post will be necessary. The hole may be started with a peavey. Make your posts short. When driven they need not come within a foot of the top of the panels. The shorter the post the easier to drive (being both lighter and also lower except in mucky soils posts do not need to be in the ground more than 12 inches to 14 inches; as they do not heave much in the Sound country. In the spring, when the ground is soft a man will move (take down, haul and set up) 80 rods of fence in a day.

By making a frame (bottom, top and end pieces of 4-inch stuff) and covering with woven wire you will have a lighter panel. The top wire of the woven wire netting need not come to the top board, but may be stayed up every four feet—saving a penny. Tie the cut ends of the woven wire netting around the end pieces, staple along the bottom and stay to top board of panel every four feet.

This wire panel will catch less wind, be much lighter to handle; will also cost a little more and take a little longer to make.

For breeding pens, calf pens, pig pens: For fencing off pease when you "hog" them off—for doing anything when you are in a hurry—there is nothing like panel fencing.

Made to suit your stock it is ideal.

I have several miles of it and will make a lot more next winter.

To pasture to advantage, you need four lots, pasturing each for ten days to two weeks; then mow the weeds and keep stock off for a month; treating each lot this way in its turn.

When you have put in your potatoes or grain, run a fence and save ground. Change your barnyard every year—save your fertility.

If you need to put up a fence in the summer, when the ground is hard, drive the posts a little way, and then when the ground softens in the fall go along and drive them as far as may be necessary.

But by the time you get your land all cleared you will be out of the kindergarten class, and so the rest of the lecture will not concern you.

W. H. KAUFMAN.

Bellingham, Wash.

### WHEAT SILAGE.

By J. R. Shinn, Spokane, in popular Bulletin of Washington Agricultural Experiment Station.

Wheat should be cut for silage while the entire plant is green and the kernel is in the milk. At this time the straw is not hollow but as the ripening period advances, the stem becomes hollow, thereby affording air space and consequent danger of spoilage when placed in the silo.

### Harvesting the Crop for Silage.

When winter wheat is grown alone for silage, it may be cut and bound the same as when grown for grain. If wheat is grown with vetch a mower must be employed, since the vetch tangles the crop. In this latter combination extra men are also necessary to open the mower swath in order to allow free passage of team and mower.

### Cutting and Storing in Silo.

Wheat should be cut into one-half inch lengths or less before being placed in the silo. It should be spread evenly in the silo and tramped thoroughly. As an extra precaution to exclude the air, parties using wheat silage have resorted to the wetting down of the ensilage with water during the time of filling or soon thereafter.

### Distinct Advantages of Wheat Silage.

1. Wheat in Spokane County has given much larger silage yields on non-irrigated farms than has corn.

2. Dairymen who have tried wheat silage claim better results in keeping up the milk flow and producing flesh than were secured with corn silage.

3. Every wheat farmer is provided with his own machine for harvesting wheat silage—the grain binder.

4. The harvest season for wheat silage comes at a time when labor is easily obtained and at about half the wage asked during the corn silage harvest.

5. The services of engines used for threshing purposes can readily be secured for cutting wheat silage, while at the time for corn silage cutting, the engines are busy threshing grain.

6. If wheat is cut for silage when the kernels are in the milk, the wild oats in the crop are removed from the field before sufficiently ripe to shatter their seed. This assists materially in keeping the land clean.

7. Winter wheat in Spokane County is ready for silage late in June or early in July, the season when the natural pasture dries up. When put into the silo, wheat furnishes succulent feed during the dry summer months.

### BUYING AND SELLING.

It is suggested by T. N. Carver of the U. S. Department of Agriculture that the big farmer is usually a better buyer and seller than the small farmer, but that the efficient small farmer can as a rule produce more economically. The cost of production is after all the very important factor in the farming operations of the Pacific Northwest as well as elsewhere, but the small farmer may gain much by acting in unison with some one else or by some system of co-operation, in his buying and selling.

The two worst enemies of the small farmer are the opponents of co-operative buying and selling, on the one hand, and the advocates of enlarged immigration to the rural districts on the other. The latter helps the big farmer, says Mr. Carver, in the buying of labor for his farm, and to reduce the price of the small farmer's own labor when he undertakes to sell it in the form of produce.

### Successful Marketing.

Successful marketing consists, first, in finding out just what consumers want and how they want it packed and delivered. The problem is to

# Crown Silos

Are now in use at the Western Washington Experiment Station, Puyallup, and at the Pierce County Farm, Sumner, Wash. Public institutions like these always buy the best. Many of our successful dairymen have followed their example. They are saving enough of their June cut forage crops to pay a handsome profit on the investment. Why not you? Write for Catalog, testimonials and price list today.

## Holland=Cook Mfg. Co.

Fern Hill Station

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**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
*C. F. Lansing, Prop.* *Salem, Ore.*

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

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Ask your horse. He knows the difference. If he could talk, he'd say—"use

## MICA AXLE GREASE

It makes the heavy loads seem light." There's a reason for this—the ground mica does it. Makes the spindles smoother. Makes the grease go twice as far. Dealers everywhere.

**Standard Oil Company**  
 (California)

get as much of the consumers price for the producer as possible and to that end every effort should be made to shorten the channel or distance between producers and consumers.

Middlemen are being accused of absorbing too large a share of the difference between the producers and consumer's prices. In some cases this

criticism is well taken and in others it is not the fault of any one or more individual middlemen, but rather of the system of distribution existing in a new country like ours where the producer and consumer are separated by long distances.

Wherever there is a highly efficient system of selling anything it will be



found that there has been developed a system of grading and standardization, that is the goods are inspected only once and are graded, thereafter they are sold or bought by grade with no further inspection. This can be done only by organization.

The biggest problem before some of the small farmers in the Pacific Northwest today is that of adopting a system for harmonious operation along with fellow farmers whereby business methods is assumed in buying and selling. One dairyman with a few cows can't afford to put in a cold storage plant but when butter from 50 to 100 cows and eggs from 2,000 to 2,500 fowls can be centralized then a small cold storage plant serves to prevent the sale of these products when the market is not attractive. When standardized, these products are assets on which the small farmer can be financed as well as can the big farmer. It takes time but the improvement is gradually going on and by another few years many small farmers in the Pacific Northwest will have greatly improved their positions relative to buying and selling.

### RURAL CREDIT.

New York has already organized a state bank to issue and sell bonds based on real-estate loans. Mr. Harding, of the Federal Reserve Board—himself a Southern banker of wide experience—recommends a like course, to all states where facilities for borrowing on farm mortgages are inadequate. Except, says the Saturday Evening Post, that Mr. Harding suggests state guaranty of the bonds the idea is eminently practical and points the proper way to meet the needs for rural land credit wherever those needs are not met now.

In most of the territory where agricultural values are well established and well known to investors there is normally no lack of funds for farm loans at reasonable rates. In other regions borrowers could probably get money at lower rates if their credit were mobilized through a state land bank and the security properly introduced to investors.

No state or national guaranty is needed. What is needed is to bring the merit of the investment before people with surplus money, and to put it in the form most convenient and attractive to them. The investment will then find its proper level in the market without intervention by the state or the nation."

The farmers themselves, can, to a large extent, do their own financing, but the present great need is some form of organization or machinery to carry on the work. For instance, a suitable system of rural banks and these can be instituted as soon as the farmers urgently feel the need of it and when they will come together to carry out such purpose. The rural credit question remains for organized farmers to settle effectively.

### SAVE SEEDS CROPS.

On account of the war situation it is likely that many kinds of grass seeds formerly imported into this country will be short of adequate supply by another spring. Farmers in the Pacific Northwest have good prospects for handsome profits from the different grass seeds, including alfalfa, the clovers, vetch and the different root crops. Even if only enough seed can be saved for the

farmers own use it is advisable to make the attempt. The demand for good seed corn for ensilage purposes will be very strong for years to come. Those who can grow a standard article will do well to engage in that particular class as a specialty.

Give every possible attention to the present year's crops from which seed can be obtained. Those who grow their own seed have the advantage of selection as to size and earliness in maturing both very important features in the production of profitable crops.

There were never better opportunities for seed growers than now in the Pacific Northwest, and those optimistic enough and far seeing enough will profit thereby.

### CHUTE AND LADDER FOR SILO.

Silos should be furnished with a chute through which the silage is dropped to the ground, and it should be large enough to enclose the doorway and the ladder. This chute is said by the O. A. C. dairymen to be of very great convenience in feeding and of great value in saving feed. It should be at least three feet square, and preferably four feet. In silos having continuous doors the ladder is formed of the gas pipe spacers in the door frame and the silo hoops. In silos of the intermittent type of door the ladder should be built on to the side of the chute at right angles to the door.

### CUTTING HAY.

Cut hay in the morning after the dew is off and rake into windrows as soon as the leaves are thoroughly wilted. Legumes (clover, alfalfa, etc.) especially lose their leaves readily and should be cured in windrow and cocks and not in swath. Two to three days in cocks should cure clover hay enough for the mow. Be sure all outside moisture (rain and dew) are off and little danger will be experienced in mow burning, providing the crop was cut at the proper stage. You can't afford to lose the leaves by swath curing. They represent a large per cent of the nutritive value of the hay.

These are the views of J. E. Larson, field crop Extension specialist of the Oregon Agricultural College:

"If grains are cut for hay, cut in late milk or early dough stage. Allow to wilt and cure some in windrow, then put into cocks of good size, well built and solid. The same method will apply to grasses except that they are often put in the haymow from the windrow."

### RURAL CREDIT SYSTEM.

To float a land mortgage bond at 3, 3½ and 4 per cent on the open market, and to keep it floating, to maintain its value during the 30 or 50 years of its life, will require modification of existing state laws, whether the bond be issued under the Landschaft plan or whether under any form of mortgage bank. And if these modifications are to be made at all, in the opinion of David Lubin, then why not adapt them so as to permit of the simplest system, the safest system, the co-operative system, the system that nullifies the monopoly of the money-lender, the most advantageous, the most economic system for the farmer, the system which 151 years of experience have shown to be sound, the "Landschaft system?"

## Made in a Plant That is Equipped to Build Perfect Silos

The WEYERHAEUSER SILO is made of the finest selected air-dried fir, in the most completely equipped silo factory in the Northwest.

The building of silos is not a side line with us but the energies and brains of this large institution have been directed to the designing and manufacturing of the right kind of silos for many years. The result has been an unqualified success in silo building.



### Points in favor of the WEYERHAEUSER SILO:

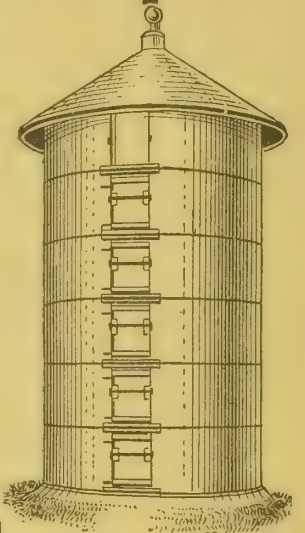
1. Its air-tight construction means perfect ensilage.
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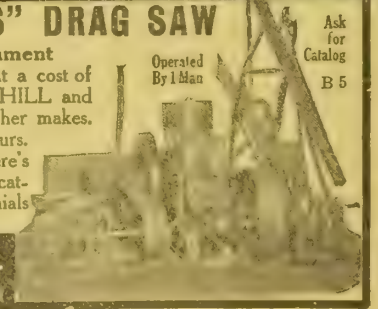
### "KING OF THE WOODS" DRAG SAW

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Will saw 20 to 40 cords of wood per day at a cost of \$1.00. PULLS ITSELF up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for FREE catalog containing full description with testimonials from enthusiastic users. WRITE TODAY.

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N. P. Wharf, Tacoma, Wash.



## SLUG-SHOT

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Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



# IRRIGATION

Adequate, available moisture  
at all seasons.

## IRRIGATED CROPS IN 1914.

Nearly sixteen and a half million dollars is the estimated value of all crops raised on the Government reclamation projects during 1914 according to Reclamation Record. This is a greater sum than reported for the State of New Hampshire in the last census of the United States and four times as large as that for Delaware. It represents an average return of \$23.50 per acre on over 700,000 acres from which crops were harvested on the projects.

The Salt River project, Arizona, was the greatest contributor to the total value, producing a crop estimated at over \$4,000,000, or nearly one-half the value of the total crop of that State.

The Yakima project, Washington, comes next, with a total crop value of nearly three and a half million dollars from the Sunnyside and Tieton units. The Sunnyside unit exceeds all others in the average return per acre, due largely to the very valuable crop of famous Yakima Valley fruit raised on that unit. Fruit was harvested from nearly 10,000 acres on the Sunnyside unit in 1914, and the yield averaged over \$110 per acre. On the whole unit about 50,000 acres were cropped, returning close to \$60 per acre.

On all the reclamation projects water was served to 761,271 acres, but the projects were sufficiently constructed so that the Reclamation Service was prepared to supply nearly twice that area, or 1,240,875 acres. The difference is made up of private and State land under ditch but not brought into production, public land not entered, and unirrigated portions of the farms in use. The latter item is a large one, approximating one-half the unused part of the area for which water was available.

The problem of bringing these unused tracts into production is one of immediate importance. This is true from the point of view of the Government, because these areas are depended upon to return in building and operation charges the large investments that have been made from the National Treasury, and such return to the reclamation fund will make possible further additions to the irrigated and producing area of the country. It is also true from the standpoint of the settler, because the growth of the community means for him better values, better markets and facilities, and improved social conditions generally.

Of special importance to the settler is the problem of developing his entire farm. His water charges are based on the total irrigable area, not only the part actually watered. His chances of making these payments and meeting the overhead expense of his farm operations out of his receipts for crops and live stock are materially improved when he has brought his whole farm into production. In 1914 the 17,000 water users irrigated 760,000 and cropped 700,000 acres, but the irrigable areas of their farms totaled very close to 1,000,000 acres.

## ALFALFA AND WATER REQUIREMENTS.

The total consumption of water by alfalfa can be controlled to a considerable extent by pasturage or frequent clipping without serious injury to the plants, according to the U. S. Department of Agriculture Bulletin No. 228, "Effect of Frequent Cutting on the Water Requirements of Alfalfa and Its Bearing on Pasturage." With a limited amount of stored moisture in the ground often the greatest amount of alfalfa can be obtained by allowing the crop to grow when the water requirement is the lowest, in the fall or spring, and by keeping the leaf surface at a minimum during the summer through clipping or pasturage. The efficacy of thus conserving the moisture during the periods of drought, has been observed many times.

Whenever the moisture supply falls short of the amount necessary to produce normal crops throughout the season, summer grazing appears to afford a simple and practical means of obtaining a return from alfalfa commensurate with the available moisture, and at the same time reduces the danger of drought injury. When the moisture supply is adequate for continuous crop production throughout the season, close pasturage or clipping would result in a marked reduction in the amount of alfalfa produced, is the opinion expressed in the bulletin.

When grazing is practiced greater production can be secured by intermittent grazing; that is, by employing several fields which are pastured in rotation.

## HYDRAULIC RAM WATER SYSTEM.

The Beal Greenhouse Company, Vashon, has installed a Hill Hydraulic Ram with 6 inches intake, 30 feet fall capacity 225 gallons per minute. The lift is 150 feet and the distance piped 2600 feet. The installation except the long distance pipe cost \$200 and is giving excellent satisfaction.

## STERLING RAMS PUMP WATER



The STERLING is an IMPROVED HYDRAULIC RAM made in all sizes for irrigation projects, city water works, farm and home water supplies, etc. Every Ram guaranteed. Capacity 2 to 5500 gals. per minute. Prices from \$25 up.

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615 Pacific Block, SEATTLE, WASH.

## PUMPS

Howard Pumps, Pressure Systems, Rams, anything in pumps or water supply systems.

Send for our information blanks and we will give you estimates on the best outfit for your particular needs. Ten year's experience.

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525 First Ave., South,  
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Clean cylinders—or dirty ones—depend on the kind of gasoline you use.

## Red Crown

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leaves clean cylinders because it is double-distilled, then carefully purified. It burns up quick and clean.

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**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

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Full of helpful suggestions to make your place beautiful.—It's up-to-date, instructive. Please mention this paper and write to,  
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We have facilities to handle quickly and advantageously  
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Merlin, Oregon, Nov. 9, 1914.  
I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50.

(Signed) H. E. THOMAS.  
"ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

Address

ORENCO NURSERY CO.  
Orengo, Oregon  
Successful Salesmen wanted.

## SPRINKLERS

With a Hartford Sprinkler you can, with suitable water system, irrigate your garden or lawn with excellent results. It is used extensively. The spray is formed by a stream of water impinging upon the spoon at the top revolving it constantly. Under good pressure a radius of 40 feet can be irrigated at one sitting.

Prices, prepaid, each: 2ft. length, \$1; 4 ft., \$1.25; 6 ft., \$1.50. Most of those used are 4 or 6 ft. lengths.

Send orders to

HENRY MOHR HARDWARE CO.  
1141 Broadway, Tacoma, Wash.

## Nursery Stock

FRUIT TREES  
SMALL FRUITS  
ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY  
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## THE "BOSS" TREE PROTECTOR



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Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.

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| 10 in. long, 7 in. wide | \$10.00  |
| 12 in. long, 7 in. wide | 11.00    |
| 14 in. long, 7 in. wide | 12.00    |
| 16 in. long, 7 in. wide | 13.50    |
| 18 in. long, 7 in. wide | 15.00    |
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CONDUCTED BY MRS. C. A. WILKINSON

### SEEING THINGS TODAY.

Only a day at a time. There may never be a tomorrow.

Only a day at a time, and that we can live. We know

The trouble we cannot bear is only the trouble we borrow.

And the trials that never come are the ones that fret us so.

Only a step at a time. It may be the angels bend o'er us,

To bear us above the stones that wound our feet by the way.

The step that is hardest of all is not the one just before us,

And the path we dread the most may be smoothed another day.

—In Live Stock World.

### DEVELOPMENT

How can you tell whether you are growing? Ask yourself these questions: Are you getting taller? Are you able to overlook some things you were unable to overlook last year? To overlook the sneering glance, the harsh word, the selfish, unkind or malicious deed? Serenely to overlook failure when you have done your best? Bravely to overlook misfortune when it was unavoidable? Cheerily to overlook dark days and darker frowns? Are you getting tall enough for this?—Amos R. Wells.

This is what life means to me: A place where a Father above deals differently unto His children, but with all in love; a place where true joys do not hang on material pegs, and where all the time the fact that God our Father is on His throne lines every cloud with gold—W. T. Grenfell

### JELLIED SALMON SALAD.

Take a pint of canned salmon, drain and remove the spine and bones, mince fine, add a tablespoon of lemon juice, a little red pepper, a teaspoon of minced parsley, and salt to taste. Mix together and bind with any prepared salad dressing and add to this one tablespoon of powdered gelatine dissolved in a quarter of a cup of cold water. Fill small moulds and set away to cool. In cold weather it will be ready to use in a few hours, but in summer let it stand over night unless you can put it on ice when it will harden quickly. Serve with a boiled or mayonnaise dressing.—L. C. S., in California Home and Farmer.

### The Cold-Pack Method of Canning.

In these days of advancing prices of nearly all food products the careful housewife should learn to utilize the garden products that would ordinarily remain in the ground and on the vines. She can with little labor and expense put up in cans every vegetable that grows in her garden if she knows the simple cold-pack method of home canning. And a postal card to the Home Canning Club office of the United States Department of Agriculture, Washington, District of Columbia, will secure this information without cost. Send at once.

### HOME CANNING.

The home canning idea is growing and every year we see more of it in the country homes, not only for the

family use, but the demand for preserved and canned fruits and vegetables is increasing in the local markets as this line of food products is well protected by both state and national pure food laws.

Home canning on a commercial scale, can be installed at a small cost. There are several devices on the market of which complete information may be obtained by sending for circulars and catalogs.

### Practical Methods.

According to Justo P. Zalalla, in California Cultivator, the different operations are divided as follows:

Preparation of the raw material, canning, syringing and preparation of the syrups, capping, exhausting, tipping, cooking, cooling, testing for leaks, lacquering, storage, labeling.

In the preparation of the raw material it has to be sorted as follows: First, according to size of fruit, large, medium, small; second, according to ripeness of fruit, green, medium, over-ripened; third, according to appearance, sound, blemished.

In order to accomplish this operation the help should be furnished with wooden boxes or any other thing suited for that purpose in which to put the sorted fruit.

This operation is one of the most important features of the different steps of canning, and great care should be taken in order to be sure that they have been done in the best way. If any of the mentioned operations is neglected troubles will arise and the succeeding manipulations will be greatly hampered.

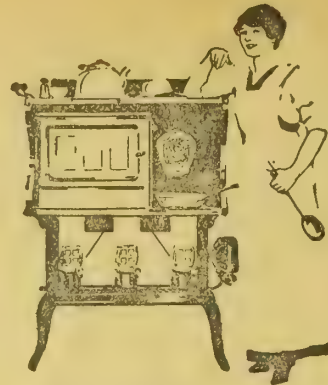
### Grading and Classifying.

Medium fruit, fruit of an ordinary size, sound and sometimes larger and in good condition of ripeness. Compare the greatest portion of canned fruit. Soft fruit is also of good size, and sound, but shows a greater degree of ripeness. Pie fruit, this fruit is over-ripened and should be used for pie making or the cheaper grades of fruit. Blemished fruit, in this sort of fruit we find all degrees of ripeness. This is not sound fruit, and is generally placed in what is called gallon pie can fruit, and placed in what is termed the "pie grade." And after operation comes the peeling which can be done by hand or by the use of a 10 per cent. solution of caustic soda. The temperature of the water should be kept at the boiling point, and the fruit should be submitted to the action of this solution from 30 to 40 seconds, depending on the conditions of the fruit and the excess lye removed immediately by washing.

Cherries, grapes, strawberries, raspberries, blackberries, etc., must be stemmed and classified according to this method.

Pears have to be sorted according to size, appearance, degree of maturity and perfection of washing. Cherries and grapes are sometimes pitted, cherries by machine and grapes by hand.

Pears have to be cut in halves, lengthwise, peeled, cored, and classified according to size. In case sliced grades of peaches and apricots are to be prepared, this operation can



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Waste of fuel before and after actual cooking.

A clean, cheap fuel—easy to handle.

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be done by hand, using a well sharpened knife.

#### Canning Peas.

Peas should be classified according to size and degree of maturity. The tender peas command the higher prices, therefore this sorting should be carefully done. After this the peas have to be blanched in hot water, the length of time varying with the condition of the peas. When blanching the water should be renewed as often as it is possible. When the peas submitted to the blanching operation show a slightly wrinkled surface they are ready to be taken off the bath. In order to classify the peas according to the six standard sizes meshes of six different diameters should be used. The diameter of the mesh is as follows: 13/32 inch, 12/32 inch, 11/32 inch, 10/32 inch and 9/32 inch.

The mesh should be shaken so as to facilitate the grading. The mesh with the larger holes is put on the top, and the next underneath, and so on to the smallest in diameter. The cans are filled by hand or machine, and the syrup added, which is one and one-half per cent brine solution, to which two pounds of granulated sugar is added per 12½ gallons. After the cans are cooked they should be cooled immediately. To secure good success it is necessary to pack the peas when they are fresh and when there is no sign of fermentation. Otherwise the formation of lactic acid begins and the swelling of the cans soon takes place.

#### SUGGESTIONS FOR HOME AND CLUB CANNING

Any one with ordinary intelligence can make a success of canning tomatoes at home by exercising care in following the instructions given in Farmers' bulletins 203, 151 and 521, U. S. Department of Agriculture. Common sense, good judgment, and experience will make for success in every way. One's individuality is quite as important as rules and formulas.

All fruits, vegetables, juices, meats, and foodstuffs must be completely sterilized and kept in air-tight containers. Insist upon sanitation. The decay and spoiling of fruit and foodstuffs is due to bacteria, spores, ferment germs, etc. Sterilize and cleanse all containers, vegetables and fruit before proceeding with the work.

Open boilers are less desirable than the closed boiler or steam-pressure outfits, as the heat of the water in them cannot exceed 212 degrees F., and the fruit jars must be kept completely covered with the water, thus requiring more time and labor than with the close outfits.

The hot-water canners with close-fitting covers on the boilers do successful work with the ordinary fruits and some vegetables. They operate with little water and much of the sterilizing is done with live steam in the upper section of the boiler. Some of these boilers carry heat from 212 to 216 degrees F.

Steam-pressure canners are most successful for canning all kinds of vegetables and meats, because the greater heat and pressure effect complete sterilization. Steam under pressure raises the heat to about 250 degrees F. and readily destroys all bacteria and spores in fruit and vegetables. From 5 to 15 pounds pres-

sure to the square inch is used in successful canning work.

Use only fresh fruit and vegetables, and always can fruit the same day it is picked.

Tomatoes should be first dipped in boiling water, then chilled in cold water to make them firmer. They will also pack better.

Let the water come to the boiling point before you lower the fruit into the boiler. Begin to count time for sterilization when the fruit enters the boiling water.

Different varieties and different degrees of ripeness require variation in the length of time given to processing. Soft fruit requires longer boiling than sound fruit. Overripe tomatoes will need to process a few moments longer than if they were just ripened, firm and sound.

Some vegetables contain acids that must be destroyed or eliminated before final processing and sealing. This is usually done by blanching or boiling the vegetables in a weak brine before filling the cans.

Differences in climate, soil and fertilizer make changes in the chemical and physical properties of tomatoes and affect slightly the time required for sterilization.

#### A FEW ESSENTIALS FOR SUCCESSFUL CANNING

In addition to the canning outfit, the following are essential for efficient work:

A clock in a convenient position where all can see it, and scales graduated from one ounce to 24 lbs.

Plenty of clean wiping cloths for wiping cans, coppers and steels.

Salt, sugar and plenty of clean, pure water.

A sharp paring knife for each person working; tables, tins, pans or containers, buckets, etc., enough for convenient and efficient work.

The necessary glass jars or a supply of tin cans with solder-hemmed caps and the labels.

Either commercial or home-made soldering flux.

In canning tomatoes it is always advisable to classify your fruit in the following divisions: Extra fine, fine, medium and small. This grading is for convenience in selling. It is well to impress upon the canners the importance of the different sizes of containers; small containers require less time than large ones. A pint can under 15 pounds steam pressure requires about six minutes, and if under five pounds, 15 to 20 minutes. A quart container under 15 pounds of steam requires eight to 12 minutes, and under five pounds of steam, 25 minutes.

## Home Canning

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For your Barns, Silos, Roofs, etc. Red—Brown—Protective—Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

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Use our  
**THROUGH SERVICE**  
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Two trains daily



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Nurserymen for four generations; 25 years at present location. From this experience we are producing stock which affords planters the very highest measure of satisfaction; carefully grown; free from disease.

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## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### HOME CARE OF MILK.

Milk Sours Very Slowly at Low Temperatures. Clean Receptacles Aid in Keeping Milk Sweet. Whipping Cream.

With the advent of warm weather the care of milk in the home becomes more complex than during the late autumn and winter. Heat to the extent accumulated by allowing milk to stand on a warm porch or in the sun is enough to start the bacteria in milk to multiplying at a rapid rate and thus make it unfit for use as sweet milk, according to the dairy specialists of the United States Department of Agriculture. The hot days also bring the flies, the great germ carriers, and the clouds of dust laden with bacteria, which, when coming to rest on milk receptacles, may easily contaminate the milk.

Milk is regarded as a natural culture medium for bacteria, and the rapidity with which the various forms will multiply, under the proper temperatures, is astonishing. It has been shown that if a cubic centimeter about  $\frac{1}{2}$  teaspoonful of milk containing 10 bacteria is kept at 68 degrees temperature for 24 hours, the bacteria has multiplied into about 61,000. In the same milk, if held at 50 degrees, the growth of bacteria would be very small, possibly as low as 40 in 24 hours. Milk which contains a large number of bacteria is either not fresh or has come from a diseased cow or has otherwise been contaminated.

Flies are possibly the most dangerous bacteria carriers which are likely to come in contact with milk. These scavengers may convey the germs of typhoid fever or other contagious diseases from the sick room or excreta to the milk. Typhoid epidemics have been caused by flies spreading the germs. Milk should be guarded from flies as rigorously as you would avoid exposure to disease.

#### Clean and Cooled Rapidly.

Cows are now out on pasture, and milk is more easily produced under sanitary conditions than during the winter months when the cows are stabled continuously. Milk may be handled by the farmer in the most correct and sanitary methods known, and yet if it is not cooled immediately after milking and kept cool until consumed, it very soon begins to change and grow sour. In fact, the bacterial content increases rapidly as long as the milk remains above 50 degrees Fahrenheit. The bacteria are dormant or increase slowly at a lower temperature. For this reason, every precaution for keeping milk cold from the time it is produced until it reaches the consumer is essential, and especially so during the warm weather.

Milk may absorb impurities whenever it is exposed to the air, or placed in unclean vessels. The amount or degree of contamination depends on the cleanliness of the air and of the utensil. Even the air of a so-called

clean room contains some impurities. If the producer and dealer have done their duty, there is left at the consumer's door a bottle of clean, cold, unadulterated milk. But the consumer also has responsibilities in handling milk so that it continues to be fit for consumption, especially as food for babies. The milk in the home may be placed in unclean vessels or exposed unnecessarily to the air, or not kept cool until the time of using. Thus things may happen to the milk affecting its quality, many of which are caused through carelessness.

#### Receptacle and How to Keep.

The custom of setting out at night an uncovered vessel which collects thousands of bacteria from the street dust before the milk is put into it, is obviously very insanitary, and yet it is practiced to a large extent. If milk is to be received in a bowl or pail by the consumer, it is worth while to have it delivered personally to some member of the family, or if the receptacle is to be placed in waiting for the milk deliverer; it should be covered with a plate, or better still, a glass preserving jar may be used, in which nothing but milk is put. The jars with the glass tops are preferable; no rubber bands should be used.

Direct sunlight on the bottle of milk warms it rapidly, and increases the bacterial content. Milk which is delivered very early in the morning, say at 4 a. m., and remains out-of-doors until 9 or 10 o'clock, is very likely to become warm and less fit for human consumption than if it were taken in the house and placed in the refrigerator early in the morning.

Milk should not be transferred from the original bottle into another receptacle until just before consumption. The bottle should be kept covered with a paper cap, or an inverted tumbler as long as the milk is in it. Milk deteriorates by exposure to the air in the pantry, kitchen or nursery. Housewives are familiar with the ability milk has to absorb smells from strong foods, like fish, cabbage or onions. It is obvious, therefore, that such foods should be kept out of the refrigerator which contains milk.

If the milk is received in a bowl, pail, or other receptacle, instead of a bottle, the same rules apply to the keeping of the milk as those mentioned above for bottled milk. Milk from the grocery store or bakery which is kept in a can, open most of the time, and possibly without refrigeration, is to be strictly avoided.

#### Milk Bottles and Utensils.

Milk bottles are made for milk and not to hold sundry other foods. As soon as the milk bottle is empty, it should be rinsed with luke-warm water until it is clean, and then set bottom-side-up to drain. Bottles should never be returned in a dirty or filthy condition. All utensils with milk comes in contact should be



## SEEING the Difference

Between the

## DE LAVAL

and Other

## Cream Separators

IT DOESN'T TAKE AN EXPERT knowledge of mechanics or a long working test to tell the difference between the De Laval and other cream separators.

ON THE CONTRARY, WITH A 1915 De Laval machine placed beside any other separator the difference is apparent at first sight to the man who never saw a separator before.

IF HE WILL THEN TAKE FIVE minutes to compare the separating bowl construction; the size, material and finish of the working parts, particularly those subject to wear and requiring to be occasionally taken apart and put together; the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, he will still further see the difference.

IF HE WILL GO A STEP FARTHER and turns the cranks of the two machines side by side for half an hour, particularly running milk or water through the bowl, he will see still more difference.

AND IF HE WILL TAKE THE two machines home, as every De Laval agent will be glad to have him do, and run them side by side in practical use, the De Laval one day and the other machine the next, for a couple of weeks, he will see still greater difference in everything that enters into cream separator practicability and usefulness.

THE MAN WHO TAKES EVEN the first step indicated in seeing for himself the difference between the De Laval and other cream separators doesn't put his money into any other machine one time in a thousand.

THE COMPARITIVELY FEW buyers of other separators are those who merely read printed matter claims or listen to the argument of some dealer working for a commission, and who do not think it worth while to see the difference for themselves.

THE WISE BUYER OF A cream separator today does see this difference when buying his first separator, while the unwise or careless one usually finds it worth while to do so when he comes to buy a second cream separator a year or two later.

EVERY DE LAVAL AGENT considers it a privilege to show the difference between the De Laval and other separators, and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it.

THAT'S THE REASON WHY four buyers out of five are buying De Laval Cream Separators in 1915, and why the use of De Laval machines will, before long, be nearly as universal on the farm as already is the creamery and milk plant use of power or factory separators.

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
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101 DRUMM STREET  
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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312. Our senior 2 year old Phiebe Cornucopia, produced 101.9 lbs. milk in one day 24.5 lbs. butter in 7 days. 12 cows of our herd have record of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

C. E. ELDRIDGE,  
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WASH.

Kindly mention this paper

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26 $\frac{1}{2}$  lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

## AYRSHIRES

Herd of 300 registered animals to select from. Has made three World's records for production. Write for catalog and prices.  
J. W. Clise, Owner

WILLOWMOOR FARMS,  
Redmond, Washington



rinsed, washed, and scalded every time they are used. When cleaning these utensils, do not wash them in dish water or wipe with ordinary dish towels. First rinse them and then boil in clear water and set away unwiped. If the receptacles are hot, they will soon become dry without wiping.

When a baby is bottle-fed, every time the feeding bottle and nipple are used they should be rinsed in lukewarm water, washed in hot water to which a small amount of washing soda has been added, and then scalded. Never use a rubber tube between the bottle and nipple.

If a case of typhoid fever, scarlet fever or diphtheria breaks out in the family, do not return bottles to the milkman except with the knowledge of the attending physician, and under the conditions prescribed by him.

#### Whipping Cream Should be Cold.

The above suggestions on the care of milk are equally applicable to cream. Often the housewife finds that the cream she has will not whip. The Department's dairy specialists point out that to obtain satisfactory results in whipping cream it should be cold and of the right thickness, containing about 30 per cent. or more butterfat. Ordinary cream, designated as coffee cream by the trade, is altogether too thin to give good results. The whipping cream, as delivered by the milkman, contains 30 to 40 per cent. of butterfat. Thoroughly chill the cream before whipping by placing it in a covered bowl on the ice. The whipping process is also aided and hastened by standing the bowl in a pan of ice water.

Two other subjects bearing on the topic of care of milk in the home are pasteurization and the food value of milk. These are treated in U. S. Department of Agriculture, Farmers' Bulletin 413, and Bureau of Animal Industry Circular 197 which may be obtained free upon application to the Editor and Chief of the Division of Publications, U. S. Department of Agriculture, Washington, D. C., as long as the Department's supply lasts.

#### COLORADO'S BIG HOLSTEINS.

Woodcroft Farm, Pueblo, Colorado, recently developed the first 30-lb. Colorado cow, Changeling Tidy Abbecker Wayne 152290, a senior 4-year-old daughter of Changeling Butter Boy, out of a daughter of Tidy Abbecker Prince, is the first to cross the 30-lb. line in the Centennial State. She produced 24,317 lbs. of fat or 30,396 lbs. butter, from 498.3 lbs. of milk, average fat, 4.88 lbs.

Two weeks later, Lady Perfection Korndyke 144592, her stable mate, calving at 5 years and 1 day, produced 29,931 lbs. of fat or 37.41 lbs. butter from 704.1 lbs. of milk in 7 days. In 30 days she produced 3195.7 lbs. of milk and 114.8 lbs. of fat.

Her best day's milk, the 29th of her test, was 116.7 lbs. and her best day's fat, 4.7 lbs., occurred in the third week of her test.

Lady Perfection Korndyke is by Pontiac Korndyke Hengervold DeKol, out of a daughter of Royal Paul DeKol Perfection.

Her ration during the test consisted of four parts corn meal, two parts ground barley, one part cottonseed meal, one part ground oats, one part wet bran, a little oil meal, third cut-

ting of alfalfa with a little blue stem hay, and nothing else.

She ate 24 lbs. of this grain mixture daily after the first week, not a pound less or more, never missed a feed and weighed 1410 lbs. when the test was completed.

Perfection's 7-day record appears to place her above both Pontiac Clothilde DeKol 2d and Findern Holingen Fayne in the 7-day division and she seems to be the youngest cow reported to have made 114 lbs. of fat with two exceptions. — Dr. Hubert Work, Pueblo, Colorado, in Holstein Friesian Register.

#### CHEESE-MAKING AT SATSOP.

The cheese market has become attractive to dairymen in various districts and at Satsop a modern co-operative plant has been established and is now in successful operation. A first class building 28x75 feet was constructed. This building was built with an eye to cleanliness and handiness. It has a concrete floor throughout. The machinery purchased was the newest in the cheese making line, and is modern in all respects. The association was fortunate in securing the services of G. Karlen as cheese maker, who is ably assisted by his son Herman. Mr. Karlen came from Switzerland where he learned the trade of cheese maker.

In the morning when the farmers bring in their milk it is weighed and placed in a large vat. Then a preparation, analogous to yeast, is put in the milk which is kept at a temperature of 86 degrees, and in a short time it turns into curd and whey. The whey is drained off and then pumped into a tank outside the factory. There the farmers can get the whey, 80 lbs. of it for each 100 lbs. of milk they bring, and it makes a fair feed for calves or pigs. The curd is salted, cut into fine pieces, worked over, and finally pressed into blocks, set into a storage room for aging, and finally put on the market. Each mold of cheese is wrapped in cheese cloth, and then paraffined so that no air, even, can reach it until it is cut and sold in the store of the retailer.

The cheese factory buys milk from any persons who care to sell, and the same price is to be paid to stockholders and non-stockholders, according to Elma Chronicle.

The capacity of the factory at pre-

## Holsteins of Pontiac and Hengerveld Dekol Breeding



Our advanced Registry list has been proven more efficient and greater in numbers of high record cows than we had anticipated. As a number of young registered cows are coming fresh we spare a few more which would make valuable foundation stock for other herds.

We also have a fine crop of calves and some Registered bulls. These bulls and youngsters are all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

Naturally the demand increases for dairy cattle during the abundant pasturage season and now is a good time to get started right.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

## Dairymen— Green Pasture

is fine—but add a little Larrowe's Dried Beet Pulp to it and see what a difference it makes.

A customer in Oregon says—"Grass or no grass, the cows must have beet pulp to do their best."



—will increase the milk flow from 1 to 5 lbs. per cow a day, even when you think your cows are at top notch.

—Larrowe's Dried Beet Pulp is the ideal feed, not only for dairy cows, but also for hogs, goats, sheep, poultry and horses. It is wonderfully rich in carbohydrates. Makes a splendid combination with alfalfa. Can be added to any ration with profit. Succulent, digestible and palatable, it entirely displaces silage (or can be fed with it, if desired) and is clean and healthful. Can be had plain or with molasses. Order from your dealer, today.

FREE BOOKLET  
"Profitable Feeding" will  
be sent to any address  
upon request.  
Write for it.

100 LBS.  
DRIED  
BEET  
PULP

**The Larrowe Milling Co.**

9th Floor, Central Bldg. Los Angeles, Calif.

## GLENDALE CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

**GLENDALE CREAMERY CO.,**

D. S. Troy, Manager.

Chimacum, Wash.



sent is 10,000 lbs. of milk per day, and with the addition of another vat this can be raised to 15,000. It is thought that it will be but a short time until the third vat will be added. The patronage the company is enjoying is much better than had been anticipated and all the offices are well satisfied with the initial work of the venture.

There are several cheese factories in the west, but the factory at Satsop is the first one in Grays Harbor County.

The officials of the Satsop Co-operative Cheese Factory are Homer Martin, president; C. E. Wagner, vice-president; W. E. Johnson, secretary; and Albert Smith, treasurer.

The power for the factory is furnished by an electric motor, and a well with a force pump furnishes the water and also give ample fire protection.

Visitors to the factory are welcome and if a person has never seen cheese made the visit is of more than ordinary interest.

#### SWEETER CREAM—HIGHER PRICES

One of the most serious problems with which dairymen have to contend is that of delivering sweet, well flavored cream. The sterilizing of utensils and care of cream in sultry weather require constant vigilance.

Where a dairy is fitted with satisfactory aerators the problem is to a certain extent simplified, but the arrangement of most dairies makes it almost impossible to aerate cream as it comes from the separator without

duced to the temperature of the water which is flowing underneath the surface over which the cream passes. The small hose attached to the cooler delivers the water while the larger carries away the waste. This cooler will remove the animal heat from the cream while flowing from the separator and as well reduce the temperature sufficiently low that it can be at once mixed with older cream and set aside for future delivery without further cooling.

The two large openings in the top of the cover of the aerator are supplied with finely perforated covering which gives sufficient pure air.

The best buttermaker in the world cannot make sweet butter from off-flavored cream. It is to be hoped the simplicity and economy of this cooler will induce dairymen to secure it unless already supplied with a similarly satisfactory working appliance.

#### DAIRYMEN AND DAIRY COWS.

In his address to the members of the Washington State Dairymen's Association at Chehalis, Mr. E. L. Brewer, the noted Jersey breeder of Satsop, made a striking comparison between the efficient and the shiftless dairyman. He expressed the opinion that 90 per cent. of all the cows milking, that are sound, are, or can be made profitable. It is the inefficient dairyman which should be discarded instead of the 300-pound cow. The man without aim will not reach the 1000-pound mark.

One of the most potent things to help a man become a good dairyman, said Mr. Brewer, is the testing of



Aerating Cream as it Comes From Separator.

repeated handling. This takes time, and consequently money, and if there is a people on earth to whom time is money it is the dairymen. We were recently shown an aerator and cooler so constructed that when placed under the cream spout of the smallest separator it will still be high enough to deliver cream into the ordinary sized ten-gallon cream can. An illustration of the cooler is given on this page.

The delivery from the separator places the cream through the opening in the cover of the aerator. From this point it is carried to the center of the cooler and if the appliance is properly levelled it will flow freely over the cooling surface and be delivered into the cream can, not only aerated but re-

duced to the temperature of the water which is flowing underneath the surface over which the cream passes. The small hose attached to the cooler delivers the water while the larger carries away the waste. This cooler will remove the animal heat from the cream while flowing from the separator and as well reduce the temperature sufficiently low that it can be at once mixed with older cream and set aside for future delivery without further cooling.

#### Feeding Pointers.

Continuing, Mr. Brewer said, In talking with many dairymen on their lack of profits I have found that they failed to bring their cows to a full flow of milk in the first thirty days. Fully 2000 pounds of milk is lost in the year by this failure from many a cow. Bring the cow to a full flow with grain in the ration and there is

BETTER CREAM

BETTER BUTTER

BETTER PRICE

## The IDEAL SANITARY CREAM COOLER



Will remove the animal heat from the cream while flowing from the separator, and as well reduce the temperature sufficiently low that it can be at once mixed with older cream and set aside for future delivery without further cooling.

Its cooling capacity is sufficient that, where used in connection with the largest handpower separator, it is capable of reducing the temperature to within three to four degrees of the water used.

It is so constructed that it can be placed under the cream spout of the smallest size separator and still be high enough to deliver by gravity into a 5 to 10-gallon can. Write for Cooler circular.

Manufactured exclusively by

## DE LAVAL DAIRY SUPPLY CO.

Everything for the Dairy

SAN FRANCISCO, CAL.

Ideal Green Feed Silos

SEATTLE, WASH.

Alpha Engines

## Registered HOLSTEIN and High Grade CATTLE

We offer several registered cows of the 25 to 30-pound class and some bulls out of same high record breeding. Also some choice high grade cows, excellent producers, in every way ready for good dairy work.

Our youngsters are coming on in fine condition, both pure bred and grade. We have a large number from which to select and can satisfy the wants of dairymen who are in the market for either the high record or choice working stock. Write or call for further particulars and prices.

H. S. ROYCE

Savage-Scofield Bldg., A Street  
TACOMA, WASHINGTON

Please mention this paper

## HEAD YOUR HERD

with a grandson of the mighty KING OF THE PONTIACS, the leading Holstein-Friesian sire of the World, through his promising young son KING KORNDYKE PIETERTJE PONTIAC.

A nice lot of young bulls for sale from large record A. R. O. cows, such as Ophelia Sanesta Pauline, 29.46 pounds; Josephine Duchess, 29.12 pounds, and 23 others with records above 20 pounds.

#### GREENBANK FARM

Greenbank, Washington

Calvin Philips,  
President

Guy M. Richards,  
Manager

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.



no other way in the winter season.

In my district ground oats and wheat bran is best for the foundation ration, production and market prices considered. To this whatever else in the shape of feed that is available may be added.

The cow is an individual with likes and dislikes and a temperament. Become chummy, be friendly and get acquainted with her. If you are prepared to take this cow on for a years race, get a pair of scales and put your cow on test. A cow on test will make 100 pounds more butter fat in a year without any extra cost, if in the hands of a good feeder than without any definite knowledge of her

daily production.

A man in my county surprised himself and other dairymen by bringing out two cows that made over 800 pounds of butter.

One of my neighbors had a cow which didn't do well. He started to feed beet pulp and the improvement was so marked that he used this feed for the entire herd, since then is producing milk creaper than before when he was feeding \$30 per ton bran. Study your cows and plan to feed, acting with promptness and intelligence. You can't delude the cow and the feel of your pocket book is no delusion in the game of "dairymen and dairy cows."

### REGISTERED HOLSTEINS AT SUMAS.

Mr. A. E. Smith, Sumas, Wash., the owner of the large Registered dairy herd at Sumas, is continually adding to his magnificent records. His Pontiac and De kol cows are, many of them, well up to the 30 pound class and they are persistent producers.

During the past three years he has purchased over 30 head from B. S. Fryar, and his records show the following production of each individual on the 7 day test. Mr. Smith has found that it pays him well to select sires which conform to his breeding plans as well as to have a satisfactory ancestral record.

| Name                                | No.    | Age | Milk lb. | Fat    | Butter |
|-------------------------------------|--------|-----|----------|--------|--------|
| Countess Mary Mahonet DeKol .....   | 200566 | 2   | 403.9    | 12.691 | 15.863 |
| Melva of Shearhart 2nd .....        | 180707 | 3   | 379.6    | 12.272 | 15.340 |
| Greenwood Oak DeKol Polkodot 3rd .. | 199887 | 2   | 345.5    | 10.828 | 13.535 |
| Rosemunda Pontiac Hengerveld .....  | 215416 | 2   | 252.1    | 8.062  | 10.077 |
| Canary Oak DeKol .....              | 160084 | 4   | 436.6    | 14.943 | 18.703 |
| Pieterji Beauty DeKol 3rd .....     | 124161 | 5   | 505.9    | 19.018 | 23.772 |
| Belle Canary Pontiac .....          | 154957 | 5   | 450.8    | 14.298 | 17.872 |
| Dimond Dear 2nd Christmas .....     | 139279 | 4   | 529.9    | 19.173 | 23.966 |
| DeKol Butter Boy Belle 2nd .....    | 180769 | 3   | 425.6    | 16.316 | 20.395 |
| Kate Homestead Beauty .....         | 106035 | 7   | 489.3    | 15.785 | 19.730 |
| Ava Modle Hengerveld 2nd .....      | 180768 | 3   | 478.5    | 18.806 | 23.507 |
| Stacy Philos DeKol 2nd .....        | 180282 | 3   | 329.3    | 13.338 | 16.672 |
| Johanna Canary Hollyhock 2nd. ....  | 200039 | 2   | 251.8    | 9.331  | 11.663 |
| Canary Hartog Canary 2nd .....      | 175995 | 3   | 262.4    | 11.011 | 13.763 |
| Wisconsin Piebe .....               | 106137 | 7   | 415.4    | 14.831 | 18.539 |
| Keep On Pauline .....               | 97417  | 8   | 465.6    | 13.008 | 16.260 |
| Tobe DeKol 2nd Ruth .....           | 128383 | 5   | 476.7    | 15.230 | 19.037 |
| Oak Belle Burke .....               | 108224 | 7   | 455.5    | 13.463 | 16.828 |
| Canary Pauline Piebe .....          | 105024 | 7   | 464.7    | 16.082 | 20.102 |
| Hello Johanna Korndyke .....        | 146357 | 5   | 423.4    | 14.040 | 17.550 |
| Lady Oak Burke .....                | 108223 | 7   | 455.6    | 14.430 | 18.037 |
| White As Snow Beauty 2nd .....      | .....  | 3   | 378.3    | 12.541 | 15.676 |
| Baun Buckeye Princess .....         | .....  | 10  | 386.3    | 12.704 | 15.880 |
| Maggie Keyes Mechthilda .....       | .....  | 11  | 375.1    | 12.441 | 15.551 |
| Pieterji Ondin Lansing .....        | .....  | 5   | 407.2    | 13.880 | 17.350 |
| Anna Tucker Mercedes .....          | .....  | 4   | 403.6    | 12.967 | 16.207 |
| Canary Spofford Empress .....       | 159458 | 3   | 371.2    | 11.162 | 13.952 |
| Princess Clothilda Jewel .....      | 201721 | 2   | 322.0    | 11.188 | 13.985 |
| Canary Pauline Piebe 3rd .....      | .....  | 2   | 255.8    | 8.326  | 10.407 |
| Lady Echo Hengerveld DeKol .....    | .....  | 3   | 556.7    | 16.073 | 20.091 |
| The Highland Jonge Pride .....      | .....  | 5   | 636.5    | 16.768 | 20.960 |
| Pieterji Ondin Lansing 2nd .....    | .....  | 2   | 301.2    | 8.955  | 11.193 |
| Anna Canary Clotilda .....          | .....  | 2   | 384.8    | 10.289 | 12.861 |
| Tobe DeKol 5th .....                | 149888 | 4   | 630.0    | .....  | 27.525 |

### THE BRADY GUERNSEY FARM.

Judge J. E. Brady, Satsop, Wash., is the owner of an ideal stock farm of 640 acres in the fertile Chehalis valley. About 240 acres of this is under cultivation and the balance in good timber and some pasture lands.

His noted registered Guernsey herd which was represented in the show ring the past two years winning many prizes, now numbers about 50 head, of which 30 are young cows doing good dairy work, the balance are youngsters from calves to two year olds and some fine bulls.

The herd sires are Donald of Ellenwood, whose sire is Glenwood of Mainstay, with 26 A. R. O. daughters. The other sire is Glengales May King, whose sire is Rheis of the May, out of Imported King of May, whose daughters hold a higher butter fat record than any get of

the breed. He is 3 years old and of ideal dairy type. His young calves also have ideal form and show indications for becoming heavy producers. Judge Brady is in position to keep the cost of producing butter fat at the minimum for nearly every bit of the feed, and a good balanced milk ration, too, is grown on the place. About 100 acres was sown partly to oats and peas last October at the rate of 2 bushels each of the peas and oats, which on June 1st appeared would yield 20 tons per acre when ready to cut for silage about June 15th. The soil had not been fertilized but carefully plowed, then disked 6 times, harrowed three times, clod mashed, then seeded with drill and rolled. A piece of oats treated in the same manner indicated an estimated yield of 125 bushels per acre and a full field of peas adjoining showed good prospects of going over 40 bushels per acre. An-

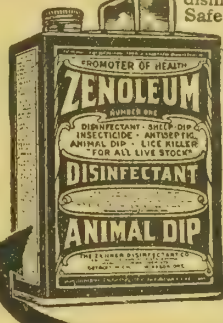
## Our Special DOLLAR OFFER to Livestock Owners

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Here's an opportunity to test Zenoleum as a disinfectant, germicide and destroyer of lice, mites, ticks, for skin trouble, wounds, sores, etc., etc., on an absolutely money-back offer. Send a dollar bill for can containing enough Zenoleum postpaid, to make 50 gallons of positive disinfectant. Full gallon can, enough to make 100 gallons for \$1.50, postpaid. Use it and watch results and if it doesn't prove to be all we claim, your money will be refunded promptly; no talk back just money back.

**King of Disinfectants—Worth Fifty Times Its Cost**

Zenoleum is used and recommended by 50 agricultural colleges. It is a coal-tar disinfectant, insecticide and animal dip, always the same. Safe and sure; will not burn or poison.



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**FREE** This 64-page illustrated book tells all about the prevention and cure of all live stock and poultry diseases. It is a standard authority, giving invaluable information in condensed and useful form.

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Please send free copy of Zenner's Veterinary Adviser.

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☐ Make check mark in the square if you enclose dollar for trial can of Zenoleum. Satisfaction guaranteed or money back.

## Vega Cream Separator

GUARANTEED CLOSEST SKIMMER ON THE MARKET

Awarded Gold Medals at three World's Expositions. Leads all in efficiency, durability and appearance. SIMPLER AND AS WELL BUILT AS THE HIGHEST PRICED SEPARATOR. Two simple worm gears do the work. Has fewer sanitary interchangeable discs. Easier cleaned. Self-balancing bowl. Runs 15 minutes independently after reaching high speed. Lasts a life time. Recommended and endorsed by leading Dairy experts in all countries. The price will surprise you.

INVESTIGATE.

**POLSON IMPLEMENT CO.**

Seattle, Wash.



SEND FOR CIRCULAR

### COTTONWOOD GROVE STOCK FARM

#### CHOICE HOLSTEINS



Some fine young bulls to offer out of Homestead Jr. De Kol and Butter Boy 3rd breeding, sired by Dutchland Sir Fayne Colanthe, whose dam and sire's dam average 30.76 lbs. butter in 7 days, 122.93 lbs. in 30 days; brother to Grace Fayne 2nd Homestead, former world's champion. His three sisters averaged over 33 tons milk in one year. Health, condition and breeding all guaranteed. Prices reasonable. Please mention this paper when writing.

**ALBERT JOHNSON**  
SCAPPOOSE, OREGON

### LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

**P. A. FRAKES**

Scappoose, Oregon



other tract was thoroughly prepared for planting with the sludstrup beet.

From practical experience Judge Brady is thoroughly convinced that oats, vetch, peas and all grain crops to be used for forage should be seeded in the fall, to be ready for the silo in the early part of June. A good second crop can then easily be obtained by fall. Mrs. Brady, together with her husband, takes much pleasure in the development of classy registered Guernseys, also poultry, particularly turkeys. She has devised a unique plan for the christening of each individual Guernsey. Combining her maiden name with part of that of her husband gives "Bralee" for the herd name and adopting floral nomenclature the cows are known as Jonquil of Bralee, Marigold of Bralee, Primrose of Bralee, Alysum of Bralee and so on. Veda May, the prize winner and others purchased under registration are exceptions.

Here is another example involving good farming principles. Very little material is bought while the crops are turned in to the finished products of cream, butterfat and classy registered stock.

#### THE CHAMPION AYRSHIRE TWO-YEAR-OLD.

Jean Armour 3d 32219 has finished a year's official test for advanced registry and holds the Ayrshire World Championship in both milk and butter fat for a two year old.

Her year's test ended March 17, 1915, with an official record of 14991 lbs. of milk, 599.91 lbs. of fat, and 4 per cent. fat.

She was sired by Howie's Dairy King 9855 imp., a bull that with a very limited opportunity has 19 daughters in the Advanced Register.

Her dam is the famous Jean Armour, who was the first Ayrshire cow to reach the 20,000 lbs. mark for the breed, and she did it on the hills of Vermont.

C. M. WINSLOW,  
Brandon, Vermont.

#### CHICONA FARM GUERNSEYS.

##### Good Cow Testing Work in Pacific County.

In an interesting letter to the Horticulturist and Dairyman, Mr. A. L. Gile of Chinook, Wash., writes:

Our Guernseys are doing exceptionally well this year. We have a cow testing association, which is doing very good work for the herds of the Lower Columbia River. In April I had 45 cows tested and their average milk production was 26.73 pounds, average butter fat production was 37.09, average test being 4.48. In May I had 50 cows tested, average milk production being 27.30 pounds, test 4.61 and average butter fat production being 37.74. The cost of the feed per cow in April was 10.1 cents and in May 7.7 cents, pasture being counted at \$1.50 per month and other feeds at their cost laid down on the farm. This does not include the pure bred under official work for the Advanced Registry, which would raise the average butterfat production. My cows are mostly all grade and pure bred Guernseys, and I believe that they are the best all around milk and butter cows that walk.

I have some very fine calves from Advanced Registry cows, sired by my bull, King of Medfield who was Sen-

ior and Grand Champion bull at the Washington State Fair last year.

Mr. Caldwell, Secretary of the American Guernsey Cattle Club, who paid my farm a visit last March was very much pleased with King of Medfield, and advised me never to sell him. He is in grand shape and will be seen on the Fair Circuit this year.

I have had the following cows complete their Advanced Registry work this year:

Algoma of Haddon, 2 years old, 7899.8 lbs. milk; 4.24 test; 344.74 lbs. butterfat.

Neetius, 10 years old, 7582.2 lbs. milk; 422.72 lbs. butterfat.

Margaret of Chicon, 6 years old, 10,769.5 lbs. milk; 473.42 lbs. butterfat.

Hazel's Girl of Chicon, 6 years old, 8864.4 lbs. milk; 456.51 lbs. butterfat.

Lucilla of Chicon, 2 years old, 6302.1 lbs. milk; 357.57 lbs. butterfat.

I have several more under test, some of them completed but have not received their official returns. I have also some very fine bull calves from some untested dams that should prove profitable for some dairymen.

ALBION L. GALE.

#### BREWERS' JERSEYS AT WORK.

Close to five pounds butter per day during the first month after coming fresh this season, is the record of Olympia's Fern, the famous Jersey of Mr. E. L. Brewer, Satsop, Wash. Owl's Golden Queen, 4 years old, is coming up close to Fern's record and will likely become one of the famous cows of the breed when her yearly test is finished. There are eleven other cows on test and all doing well. The present milking herd numbers 28 with others soon to freshen, and from 12 to 14 cows are constantly being tested to determine their exact worth at actual dairy work. One of the herd bulls is Dulcet's King, imported, which was purchased from H. West. He was shown in 12 fairs and never beaten.

Mr. Brewer has a fine crop of youngsters, the greater per cent of which are young bulls whose ancestry have records which determines their good value.

Mr. Fred L. Berg, of New Plymouth, Idaho, selected two fine heifers and a bull from this registered herd for foundation stock recently, and several others are preparing to pick breeders for the improvement of their own herds. Mr. Brewer has a field of rye and peas sown in December which is maturing for silage this month. His seeding was 60 lbs. vetch and 30 lbs. rye in well prepared soil. His concentrate is ground oats and bran or barley and bran mixed about equal parts and fed according to the requirement of each cow. With the pea and rye crop and pasture about nine months of the year, the feed for the entire dairy herd is produced on his farm economically, and the production of butter fat kept at a minimum cost. Careful management and good judgment in breeding affords an attractive revenue on the Brewer farm factory, virtually turning good Grays Harbor moisture into the finished product of butterfat and world famed registered Jersey cattle.

#### The Glendale Creamery Co.

The Glendale Creamery Company at Chimacum has a very complete



## Puget Sound Herd Holsteins

HERD SIRES—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

Five first daughters of Quirinus Cornucopia tested at an average age of 2 years 1 month, have made records that average 19.5 lbs. butter in 7 days, 2000 lbs. milk and 76.1 lbs. butter in 30 days. One 2-year-old in the yearly test produced in 9 months 17,915 lbs. milk and 725 lbs. butter.

Sir Chimacum Wayne is the world's greatest milk and butter bull. His sons up to 5 months of age are now being offered for sale. Our herd numbers 250 head and we can supply registered stock for foundation herds and for good working dairy herds at right prices.

WM. BISHOP, Prop.  
Chimacum, Wash.

## Cascade International Stock Show

Will Advise You Where You Can Buy

GENERAL UTILITY  
ANIMALS

as well as

REGISTERED SIRES  
AND DAMS

A. J. SPLAWN, President.

For Information Write

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.



#### VALLEY VIEW DAIRY FARM

Registered Holstein bull calves of all ages for sale.

Calves sired by Mutual Fobes Longfield De Kol and Annie De Kol Lakeside Model. Both proven sires with better than 30 lb. dams and better than 30 lb. sisters. Both are show animals as well and of high class. Also some females of all ages for sale.

For particulars, description and price, write,

H. C. DAVIS,

Granger, Wash.



manufacturing plant which includes a modern creamery completely equipped with the very best up-to-date machinery, a cheese factory and cold storage plant in connection. Besides this company owns 3 creameries in Clallam County, a cheese factory at Center and Quilcene, also an ice cream and distributing plant at Port Townsend, all operated in charge of Manager D. S. Troy. The dairy cattle here are mostly Jerseys, both registered and high grade and while considerable attention is devoted to the breeding of cattle, the manufacture of dairy products has been given prominent attention but the pure bred registered stock is gradually displacing the others in their milking herd of 50 cows. At the present times there are 5 cows in the annual test. One of these, Saloma Darling, gave 53.85 pounds fat during the month of April. Another cow, Brooketta, first daughter of the cow presented to Gov. Lister, gave 47 lbs. 1 oz. butter fat as 2-year-old in April. Chiqueena, a 5 year-old cow, gave 61½ lbs. butter fat in April. The herd sire has dams and granddams of very high records.

Some of the young bulls whose granddam gave nearly 1000 pounds butter in one year, are of ideal dairy type and condition. The aim of the management of this plant is to assist patrons and dairymen generally to raise cows with increased capacity over the average cow, for there is far more satisfaction in receiving a check for the butter fat of a cow yielding 500 pounds butter than from one giving 250 pounds a year, while there may be no great difference in the care and the value of the feed.

When market prices for either butter cheese or eggs are not satisfactory these products go into the cold storage room at this plant, but Mr. Troy does not anticipate any great amount of storage this season, nor for any great length of time. The prospects here are that prices may not go to extremes either way, but on the whole, are likely to be more satisfactory for the dairy industry in general than has been the case the past two years.

This plant demonstrates that dairymen in the coast section can raise more of their feed than they generally do and at a lower cost, that the aim and endeavor should be to put on the market a standardized product of higher quality than is generally delivered by dairymen and that it pays best to have the cold storage plant as near the producers as possible.

#### Phenomenal Holsteins on the Eldridge Farm.

Phiebe Cornucopia, the 2-year-old Holstein cow of Mr. C. E. Eldridge, Chimacum, Wash., produced 101.9 lbs. milk in one day. She would have made the world's record for a two year-old had she not encountered some udder trouble, but she comes in a good second winner. Margie Jaunita, a 3-year-old, made a record of 28.3 lbs. butter in 7 days and 120 lbs. in 30 days. There are 37 cows in this registered herd which give over 80 lbs. milk a day and a good proportion of them yield over 100 pounds a day.

There are many fine young calves born since January on this place,

and eleven very choice yearling heifers. One of the herd sires here is Ononis Cornucopia Johanna Lad, which has 5 sisters yielding over 112 pounds a day and his daughters have a record of over 24 lbs. butter in 7 days.

Mr. Eldridge is naturally a dairyman. He sees the possibility of very high records and clears the way to attain the desired mark without any apparent great difficulty. He lives with his cows, in so far as careful planning for their comforts is concerned, in providing for their needs and in overcoming any exception from good dairy rules that may arise.

World's phenomenal records attained here is not a matter of luck. Good cows were selected for foundation, adequate shelter and feed is provided and the methods of the most successful breeders elsewhere are ascertained and operations at this place figured out accordingly for the very best results.

#### HOLSTEINS AT CENTER.

Mr. Thomas Yarr, Center, Wash., has 18 registered Holsteins. Ten of his 2-year-olds are testing from 18 to 22½ lbs. fat in 7 days. Four of his cows brought a handsome price recently. He is preparing for some good future records.

#### Dr. Weed's Guernseys.

Dr. Park Weed Willis, Seattle, who owns a valuable Guernsey herd east of Lake Washington, writes that his young calves are coming on in fine shape and that the demand for young purebred stock of this breed is increasing. One bull calf was sold when less than 24 hours old.

#### AHTANUM WIDE HOLLOW COW TESTING ASSOCIATION.

Editor Horticulturist and Dairyman:—You will probably be interested in the organization of another cow testing association, the second in the state, east of the Cascades. Mr. J. A. Lockhart, of the Western Dairy Division, has been assisting me in this work in the Yakima valley. The new association is named the Ahtanum-Wide Hollow Cow Testing Association, with its territory in the Ahtanum valley and Wide Hollow district near North Yakima, and includes about twenty members and approximately 500 cows to start with.

They met and organized recently, electing E. B. Marks as president, I. S. Pue, vice-president, Ray N. West, secretary and treasurer, with Thos Fear, J. A. Simonson, Alex Todd and J. F. Schreiner as directors.

Active work will begin about the middle or latter part of the month, as soon as a tester is employed and other arrangements completed.

I believe this will stir up a lot of interest in dairying in the Yakima valley and accomplish a great deal of good.—Yours very truly, A. J. LASHBROOK, Field Agent in Dairying, U. S. Department of Agriculture, and Washington State College.

## BLACK LEG

**LOSSES SURELY PREVENTED** by Cutter's Blackleg Pills. Low priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. **THE CUTTER LABORATORY, Berkeley, California.**

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SALE

Upwards of 100 HEAD VERY CHOICE 2 and 3-year-olds, now coming fresh, out of pure bred sires and good producing dams; they are of good dairy type and showing to be large producers. They were selected as young heifers from some of the best working herds on the Coast and are in excellent condition. Their calves are nearly full pure bred. Early buyers have opportunity to make some choice selections. For further particulars and prices write or call.

**F. F. FOLSOM**  
**KENT WASH.**

## Waikiki Farm

Breeders of  
**JERSEY and Ayrshire Cattle**  
**Duroc Jersey Swine**  
**Shropshire Sheep**

**IRA P. WHITNEY, Supt.**

**Route 7, Spokane, Wash.**

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,**  
**Seattle, Wash.**

Please Mention Horticulturist & Dairyman

## Dairy Supplies

Cream Separators, Anker-Holth unsurpassed, testing outfits, milk-bottles, seal caps, stanchions, churns, everything required to equip a modern dairy farm or creamery.

Remember that quality is strictly our watch-word and our prices are reasonable.

## Poole's Seed & Implement Co.

1507-9 Pacific Ave.

**TACOMA, WASH.**

## Holstein Home Herd

Watch this space from month to month for what we have to sell this year. Young cows and heifers bred to Mutual Fobes Longfield De Kol, No. 82959, the Grand Champion bull at the Washington State Fairs, 1913 and 1914, and a few choice ones bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old.

**E. B. MARKS**

Route 5, NORTH YAKIMA, Wash.

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
**FOR SALE**

Grandsires have many tested daughters. Also some choice purebred

**POLAND CHINA PIGS**

Write for prices.

**E. L. Lloyd**

Box 466

Monroe, Wash.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT Dungeness, Wash.**

#### LA CONNER FLATS STOCK FARM

### REGISTERED HOLSTEIN CATTLE

Our service sire, Segis Pontiac Acme, has dam, grandam and great grandam with average year's A. R. O. records of over 24,000 lbs. milk and 1080 lbs. butter. A few choice young bulls from tested dams.

Also Duroc Swine

**J. H. HULBERT, JR.**

**MT. VERNON, WASH.**

**FARM LANDS**—In Central Washington, improved and unimproved. Particulars on application. References: H. B. CARROLL, Ellensburg, Wash.

**GOOD REGISTERED BERKSHIRES**—Choice pigs, \$10 each at weaning time.  
**W. D. GOOD, Mt. Vernon, Wash.**



# STOCK

## LIVE STOCK AT PANAMA-PACIFIC EXPOSITION.

The Panama-Pacific International Exposition is a one-time event, and honors won in its live stock shows will have a unique value, as they can never be duplicated.

The Prize List is now ready for distribution, and the rules which govern the entry and exhibition of live stock will be of special interest.

### Exhibition Dates.

The exhibition dates for the various classes of animals in the Department of Live Stock of the Panama-Pacific International Exposition are as follows:

Horses—Sept. 30 to Oct. 13.

Beef and Dairy Cattle—Oct. 18 to Nov. 1.

Sheep and Goats—Nov. 3 to Nov. 15.

Carlots of fat Cattle, Sheep and Swine—Nov. 11 to Nov. 14.

Poultry and Pigeons—Nov. 18 to Nov. 28.

Dogs, Cats and Pet Stock—Nov. 29 to Dec. 1.

Children's Pets—Dec. 1 to Dec. 3.

### Judging Rules.

In the Department of Live Stock of the Panama-Pacific International Exposition the "One Judge" system will prevail throughout, and all animals shown in every ring will be given place, at the discretion of the judge.

The absence of competition will not bar an exhibit from receiving a prize, and if there are fewer animals in the ring than there are prizes offered the judge will place each one on its own merit in the rank to which it is entitled by its quality.

No unworthy animal will be given recognition by the judges, and every award must be based on merit.

Forty-five breed record associations offer special cash prizes to be distributed under their own rules and to be paid by the officers of such associations. The placing of animals in the open competition will govern for the special prizes given by these breed record associations, by individuals and by states.

All animals will be judged according to the rules of the recognized breed record association, but if foreign or other animals are exhibited which are not recorded in the books of the associations named in the Premium List, such animals will be judged by the standards of the associations to which their exhibitors belong.

## BREAKING AND TRAINING COLTS.

Loosen the rope from the post, step off from the horse, and tell him to "come," following the command with a pull on the rope. As soon as the horse advances pet him, then step away and repeat. He will soon follow without the pull on the rope.

The next day the crupper should put on at the beginning of the lesson, but should be discarded after a short work-out and the halter alone used so that the colt will not depend on the crupper rope. These lessons should be continued until the colt leads satisfactorily.

To break to lead without crupper ropes use a strong halter with a lead rope. Step back about 6 feet from

the colt, opposite his shoulders, cluck to him, and pull on the rope. The colt will be forced to take a couple of steps; reward him; cross in front to a similar position on the other side and repeat the command with a pull. Continue the lesson until the colt follows. Never pull straight ahead on the colt; he can outpull. Use diplomacy rather than force.

### Breaking to Drive.

After the colt has been broken to lead he may be accustomed to the harness and trained to rein. The horse should never be hitched to a wagon or ridden before he is broken to drive in the harness. He should be trained to answer the ordinary commands. In familiarizing the colt with bit and harness the "bitting harness," which consists of an open bridle with a snaffle bit, check and side reins, and surcingle with crupper, may be used. This rigging is put on the colt leaving the side and check reins comparatively loose and is turned loose in a small paddock for an hour. The second lesson consists of teaching the colt the feeling of the reins which may be tightened somewhat. The third day the driving reins may be used and the colt is taught to go ahead. Cluck to the colt, or tell him to "getup," use the whip and let him know what is meant. Both sides of the colt should be trained, as objects viewed from different angles may frighten him badly. Driving in a right and left circle will facilitate this training. The next lesson consists in teaching the horse to answer the commands of "Whoa," "Get up" and "Back."

After teaching the horse to go satisfactorily in the bitting rig, the work harness with breeching can be substituted. The traces and breeching should be joined loosely together and gradually tightened, as the work progresses, thus familiarizing the colt with the sensation of wearing the collar and breeching. He is then ready to be hitched to the wagon or cart single, or double.

Breaking the colt to drive double, also to ride, dealing with bad habits, throwing a horse, etc., are other features of this bulletin, No. 667, which may be had upon application to the Department of Agriculture.

## CASCADE INTERNATIONAL STOCK SHOW.

The Cascade International Stock Show organized January 14th at North Yakima, is evidence of the deepening interest that stock men are taking in the extension and development of their own business. They not only said, "We are in favor of talking education in the live stock industry, but we are willing to back it with both our time and money."

There is probably no other individual industry at the present time where men are giving as much of their private time to the advancement of their business as the stock men are in the Northwest, and upon this very fact we may base our assurance that their stock show will be a success. With the Northwest early winter circuit of three or four shows with splendid premium lists offered, exhibits should be of the finest char-

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is popular among dairy-men who appreciate that that

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### FOR SALE

A few choice cows with official records and tuberculine tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

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A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

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Descriptive Circular Free.

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## A GUERNSEY BULL

A very fine 2-year-old Guernsey sire is offered for sale. He is sired by Melba's May Prince, out of Imported Chartreuse, with advanced registry test of 10,238 lbs. milk and 525 lbs. butter in one year. This is a rare opportunity to get a young Guernsey bull of this class. The price is reasonable considering ancestral records and the excellent quality of the animal. Write for particulars. AUGUSTINE & KYER,

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Registered bulls and cows for sale. Good producers. Write for records and prices.

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A few choice young registered bulls and heifers. Best breeding. Write for prices.

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## HOLSTEIN SIRE

Some splendid registered bulls for sale out of Lunde Artis, Requisite 3rd and Karel Bos breeding. Write for full particulars as to pedigree and prices which are reasonable.

CHERRY VALLEY STOCK FARM

A. P. Malloy, Prop.

Monroe, Wash., R. D. 1



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

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Box 34, Milltown, Wash.

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from Pogle Torono Stock of HOOD F RM

A few high class young bulls for sale. Sired by Torono's Olinda's Pogle, a grandson of Pogle 9th and Torono of Hood Farm. These bulls have a larger number of cows in the 800-pound butter class than any Jerseys in the world. Also two pure bred registered Percheron stallions by Surugua, Champion of Alaska-Pacific Exposition. They are full brothers two and three years old, solid black; none better can be bought. Will sell on terms.

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Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 5 months. Price on application.

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Young bulls for sale from cows with authenticated yearly records; no females for sale at present.

DAVID C. DILWORTH

Buckeye, Wash.

WANTED—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.



acter, and we know they will be.

The Cascade International Stock Show believes fully in educating the young men and women, and they will offer in the premium list approximately a thousand dollars in cash and five hundred dollars in special premiums to students, boys and girls, and the open judging contests. There will be the regulation College students, judging team contest; then there will be the new feature of high school teams. This is something new in the field. There will also be three boys and girls' classes, one for those under fourteen years of age, those under eighteen years, and those under twenty-one. The latest, and which may develop into one of the strongest features, will be a free for all judging class, which anyone will be eligible to enter,—man or woman, boy or girl, old or young. There is no question but that this feature will draw a great deal of favorable attention.

S. B. NELSON,

Secretary.

#### BOOK ON INSECTS

#### AND REMEDIES.

Insects of Economic Importance is the name of a book written by Glenn W. Herrick, Entomologist at Cornell University. It describes the principal pests of our main fruits, grain and of the household, giving also the remedies. It was published in 1915 by Carpenter & Co., Ithica, New York. The price is \$1.00.

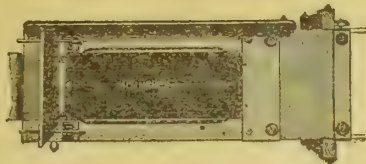
R. C. Field, formerly sales agent for the Pacific Car Company, has taken over the business of the Green Motor Co., at 808-10 A St., Tacoma, Wash. The Green Autos are sold in both 4 and 8 cylinder forms, ranging in price from \$1275 to \$1475, a popular and durable car for country service.



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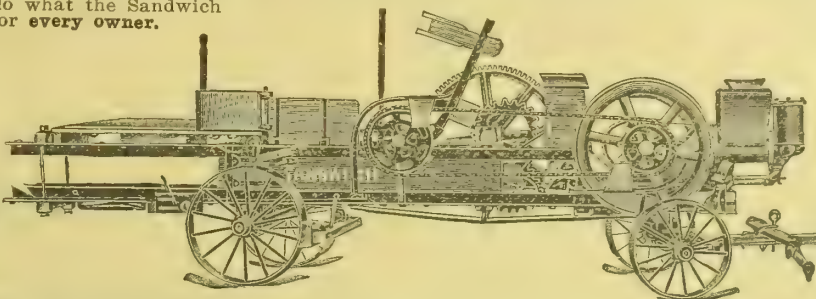
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deal of respect by dairymen all over the Pacific Coast, makes the statement that "Grass or no grass, the cows must have beet pulp to do their best." He has found that it pays to use dried beet pulp all the year round, no matter what other ration he may be using. Dried beet pulp seems to furnish certain constituents that are lacking in grass, alfalfa, etc., and will increase the milk flow from 1 to 5 lbs. per cow a day, even when the feeder may think that his cows are at the top notch.

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helps to digest the whole ration, and that stock take to it ravenously, and that when wet furnishes all the succulence that may be desired, it is proving in sections where silage cannot be obtained, or even where silage has been looked upon with favor, to be an excellent substitute and much more desirable from the point of view that it is always ready, no waste, and the cost in the long run is less. Those who may not be familiar with the best ways of feeding dried beet pulp, may obtain a very practical treatise upon feeding in general, without charge, by addressing the Larrowe Milling Company, Ninth Floor, Central Building, Los Angeles, Cal. Ask them for a copy of their free book, "Profitable Feeding," and it will be sent to you gratis.

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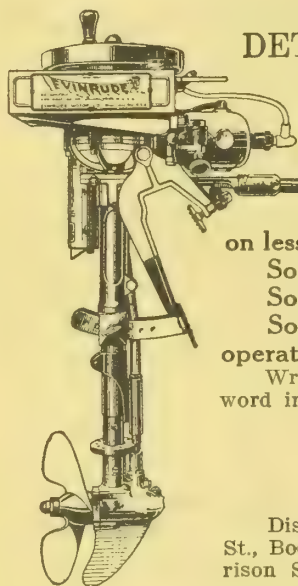


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Twenty-eighth Year

TACOMA AND SEATTLE, WASH.,

JULY, 1915

No. 7

## Independent yet Harmonious

The American farmer is exceedingly independent, a most noble trait. He could hardly be otherwise to be a good citizen of this government for that is one of the underlying principles on which it is founded and the rural communities form the backbone of good politics, as has been demonstrated by the elections held in some of the larger Eastern states, also in the West, during the recent past years.

But there is such a thing as being too independent for the best interests of the individual both financially and socially. At the present time many young farmers, fruit growers and dairymen are very desirous of making comfortable homes here in the Pacific Northwest. They need to learn principles and many details that are necessary for success, and then having resolved to put forth effort they require credit. It is far easier to attain any or all of these through harmonious action with others in the community than when working independently. The first thing a good financier must consider of an applicant who has little or no property holdings, for a loan, is his standing in the community. Is he honestly independent in effort, yet harmonious in action with others for the good of the community? A step higher is association with others for some endeavor, founded on correct principles, having good policies and capable managers. The Puyallup and Sumner Fruit Growers' Association has made loans to purchase material for its membership in a much greater amount than would have been possible for the average member to obtain proportionately, had he not been harmonious enough to join with others to build up this big machine. The same may be said of the different farmers' unions organized for the purpose of handling the wheat crops to the best advantage, many different fruit growers' associations all over the Pacific Coast, and co-operative dairy associations. In all of these there is independent thought, plan and action of the individual, yet all tending towards harmonious efforts through whatever association is in existence.

At the present time there seems to be some hesitancy on the part of fruit growers to line up with the growers' council which was organized at Tacoma last winter. The independent feeling is rather too strong for the harmonious action which is positively necessary for the success of this mam-

moth growers' organization. It seems to have been founded on correct principles and its policies were prepared by capable leaders who are honestly endeavoring to work for the best interests of the producers. There may be apparent good causes for independent action to the extent of withholding support if the work is only for this season, but the progressive fruit grower will look much farther ahead than that when the matter is properly brought to his attention. Harmonious action may require a seeming sacrifice of the independent feeling, but the broad-minded, far-seeing producer fig-

ures that it is to his own best financial interest eventually that he should line up with others for harmonious work to obtain the fullest measure of reward for his labor and effort, which according to the experience of producers all over the world can best be attained through harmonious action co-operating with others by means of associated efforts in some tangible form.

The fruit growers are lining up when they understand the situation. It is largely a matter of education to realize the great privilege of being independent yet capable of harmonious work.

The election of President McKinley in 1896 and again in 1900 was brought about by the business men of the United States, rather than by the politicians. The business men and the farmers can name, not only the next chief executive of the Nation, but they can lay the foundation for policies and systems which will permit the wheels of industry to turn more steadily and more satisfactory to all the people than has been the case during several years past. The question lies largely with the independent farmer will he unite with others to do it.



Amid Douglas Firs on the way from Tacoma to Glaciers and the National Park where many visitors will pick wild flowers and throw snowballs during July and August.

Courtesy West Coast Trade



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

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During the next six weeks to two months is a good time to hog off the pea or some other grain crop to get the 150 to 175 lb. porker ready for the September or October market.

The business of a market hog is to make steady gains and if not averaging about a pound a day increased weight he is shirking duty. See that he is engineered on the right track, or you may be fooled on the profit margin.

## BASIS FOR CREDIT.

Texas bankers have fixed certain standards as basis for credit among individual farmers. An average family of six with a forty acre farm unit must have, or showing a willingness to possess, a certain number each of cows, chickens, pigs, and grow adaptable crops, or their equivalent to feed the stock which is to be used in support of the family. This indication of thrift together with integrity is considered a good basis as guide for credit.

It is the privilege of every farmer to make out his own crop rate sheet and ascertain for himself if he is safely in position for credit, if so he is likely to get it when wanted, and if not then he should change to conform to it.

## QUALITY ESSENTIAL.

Buy that which affords satisfaction and you will forget the price, but an unsatisfactory purchase is an aggravation, no matter how low its cost. This general rule applies both ways. The farmer who puts an article of high standard quality on the market, in some way designated, maintains a selling advantage over the farmer who is indifferent, which eventually makes a wide difference in net profits. Quality of goods is always an essential factor in any successful enterprise.

## THE BUTTER MARKET.

Butter is now being shipped to Australia from the Pacific Coast. Among those contributing in a recent sale were Turner and Pease Co., Bradner and Co., Linden Cream-

ery Co. and the Cudahy Packing Co. Butter to go into any long distance market must have a high score, including a firm texture.

The butter market is gradually rising with indications for steady prices. The production on the Pacific Coast, for the first time, is about equal to the local demand, if the foreign markets had not begun to draw for supplies the market would have been several points weaker at this season.

Speaking of the prospective butter market and in further development of the dairy industry in the Pacific Northwest, a representative of the Miller Bros. Company, Tacoma, said that it was likely butter would be shipped to the New York market via water route by another year. Careful preparation, however, is necessary to develop that or any other outside market. No chances may be taken on quality of the product. The article must be up to score in flavor, grain, firmness and pack. This implies strict cleanliness from the milking on through every process of manufacture and the volume must be sufficient for a dependable supply to an established trade. The question of enlarging the market for dairy products of the Northwest remains for dairymen themselves to answer. Can the land crops, cattle and labor be figured low enough for a profit margin at or about the present market price? In some cases yes and in others no. The correct solution will require workable plans carefully and practically arranged such as can be adopted by groups of dairymen working co-operatively in a community. Several are already in existence, among which may be mentioned those at Enumclaw, Stanwood and Lynden. Reasonable price for land is very essential, good cows, a maximum yield of forage crops, both necessary, but above all a willing disposition to work harmoniously with others in the community for a good product made at lowest cost. The exporters are ready to serve in the development of the butter market whenever producers can make use of them.

## A RURAL CREDIT SYSTEM

Missouri has passed a law to create a revolving fund of \$1,000,000 for rural credit operations. The plan is based on the French system. Loans are made on improved farm property at low rates of interest covering a long term of years, to the extent of half the value of the property. Trust deeds and notes are given for security. When certain amounts have been loaned, the land bank, through which the business is done, will have power to issue and sell debenture bonds to an equal amount of such loans. These bonds are then sold to replace the sum of money which has been taken.

The advantage to the farmer with small holdings is credit for a long term at low rates of interest, but he must know positively that his farming operation is based on methods to make good, or he will lose out the same as if the loan is private capital. This rural credit system can be a great help to practical farmers who understand how to make steady gains with their chosen line of husbandry, but there must be ownership to some extent of prop-

erty, and correct methods of operation put into practice.

## PROSPECTIVE SEED GROWING.

The Southwest Washington Fair Association has made a strong feature of exhibiting grasses and grains produced in that part of the state for years. Some of the farmers there will do well to profit through this splendid work by raising seed of some of the selected varieties for the market. There is a great and growing demand for vetch seed, the different clovers and for numerous varieties of peas. Choice seed oats, speltz, and wheat raised for seed is also likely to pay the grower far better than prices the ordinary market affords. This of course requires some carefully made plans and painstaking efforts. Who will be the leader to make some easy money in seed growing? The World's oat record belongs to this section.

## IMPENDING MEAT SHORTAGE.

So legible is the hand writing on the wall that misconstruction is impossible. Meat scarcity faces the whole civilized world. This is especially the case with beef. Export cattle trade, supposedly extinct, has revived, several thousand bullocks having been recently sent across the Atlantic from Chicago and Toronto to feed the armies of the Allies in the western theater of the European war. England is wrestling with the gigantic task of furnishing beef to its own forces and those of France, and the drain on the world's surplus is already evident. In Great Britain beef and mutton so scarce that thousands of retailers have been forced out of business. If the war ends at an early date growing scarcity will be less pronounced, but continuance means semi-famine, predicts the Live Stock World.

## SOUTHWEST WASHINGTON FAIR.

The Seventh Annual SOUTHWEST WASHINGTON FAIR is to be held August 23-28 on its grounds, half way between Centralia and Chehalis, on the Pacific Highway, and the Electric Car Line running between the two towns.

This year promises one of the best; they have always held good fairs.

A new Chicken House has been built, modern in every way, 24x120 feet, and will give ample room for all exhibitors. Bring along your birds.

Another feature is a new building for the Commercial exhibitor and demonstrator, 64x270 feet fitted up specially in different size booths to suit the convenience of all in this line.

Crop conditions in this section was never brighter. Mr. F. A. Degeler, collector in the field since the first of June, reports wonderful showing in grains, grasses and fruits. Farmers will show without any exception, this year the largest number and kinds of grain in sheaf, of any

fair in the West. This will be worth coming miles to see if you are interested in that line.

Stock conditions are getting better every year. Some splendid herds of each of several breeds in goodly number will be shown.

The race events for the fair this year are most promising. The horsemen will have the largest list of entries in the fair's history. The half mile track is one of the finest in the Northwest.

The management invites all livestock exhibitors to take in the fair this year as its dates do not conflict with any other fair. This event opens the circuit. The 1915 Premium List is out. If you have not received one and are interested drop a card to G. R. Walker, Secretary, at Chehalis, Wash. Any other information you might desire will be furnished you by the Secretary.

## HORTICULTURAL MEETINGS.

The American Pomological Society will meet at Berkeley, Calif., September 1, 2 and 3. The itinerary provides for many side trips while going and coming. Also to the fruit sections of the Pacific Coast.

The nurserymen's meeting date at San Francisco is August 12-14, and the florists will assemble closely following. The horticultural attractions at this great fair are immense. Great opportunities are afforded to line up for future operations to the benefit of the individual, the community and to the country at large. Many are preparing to attend.

The U. S. Department of Agriculture has a bulletin on "Lawn Soils and Lawns" (No. 494), and a bulletin on "Beautifying the Home Grounds" (No. 185), which will be sent to applicants as long as the supply lasts.

J. F. Jansson, of the Meadows, Seattle, sold three carloads of high grade Holsteins last month to dairymen in different parts of the state.

## WHO PAYS FOR ADVERTISING?

Who pays for anything produced and sold? The consumer, of course. And this applies to the manufacturing and the marketing departments alike. The James Barn Magazine of Fort Atkinson, Wisconsin, directs attention to the fact that when a firm does manufacture a satisfactory article, that the better the machinery for the purpose, and the better and more thoroughly the goods are advertised, the greater is the amount which can be sold, thus making the cost to each consumer less, or at least in proportion to the quality of the article in question, made and sold, as compared with goods but little known.

It would be utterly impossible, says the Journal, for us to sell the present James equipment at the prices we get without the most modern tools in the factory and the most modern adjunct to selling—advertising.

James equipment has not been greatly reduced in price, but it has been greatly increased in quality and efficiency, which is the same thing.

## Grange On Rural Questions

Rural Credit and National Marketing was carefully considered in Master Kegley's address at the Centralia

meeting. Concerning progress along this line he said:

"The great issue in the national



field in support of which it is supremely important the farmers of the entire country should be united are Rural Credits, and National Marketing. The right settlement of these questions means financial freedom and square dealing in selling. Keenly realizing the need of a simple plan of getting the producers together to accomplish these great objects we have worked steadily to this end and it affords me intense satisfaction to be able to inform you that as a result of our pioneer efforts there has been organized The Rural Credit League of America to direct the work for Rural Credits, the National Marketing Committee to direct the work of the National Marketing. The President of the National Marketing Committee is United States Senator Duncon U. Fletcher, of Florida, and your State Master is President of the Rural Credit League. The members of the Executive Boards of both organizations are men of marked influence in the farm world and the Secretary and Managing Director of both is Brother George P. Hampton.

"Joint headquarters have been opened in the Bliss Building, Washington, D. C.

"At the annual convention of the great Southern Commercial Congress at Muskagee, Oklahoma, April 27-30, a campaign through the South for the National Marketing Committee was launched. The Hon. W. S. Goodwin, a member of Congress from Arkansas, and a member of the Executive Board of the National Marketing Committee, officially represented the Committee and delivered an address finely covering the purpose of the movement and including an appeal for united action. Strong resolutions were adopted urging every community in the South to co-operate in this nation-wide get-together movement to settle the problems of the distribution of farm products on a sound basis.

#### Good Roads.

"The position of the Washington State Grange on good roads has been and will continue to be for the farmer's roads first. We sounded the battle cry for good roads at the Good Roads convention, at Aberdeen, Washington, February 23-24th, 1910, and our position has never changed. The things we then warned against have happened. In the last legislature the road appropriations were made the subject of the most vicious "log rolling and pork barreling" that ever disgraced our State. Patrons, I urge you to give this subject your most earnest attention. The stand we took in 1909 and 1910 is the stand we should take now. The declarations then made are our declarations still. They should be published broadcast throughout the State. The battle for good roads is fairly on and we must get right into the fight if the farmer is to receive his just portion of the tax fund for road building. We must see to it that no legislature shall ever disgrace the State by making the appropriations for road improvement a corruption fund. Let your stand on this matter be strong and determined.

#### Taxation.

"We wonder why our taxes are climbing higher and higher from year

to year. If your own business was managed as is your County and State, nothing could save you from bankruptcy. All that saves the County and State from the same fate is the almost unlimited power of taxation. If you owned a business as great as the County in which you live would you, do you think, follow the same plan as that carried out in County affairs? Would you discharge all heads of departments after they had served you a few years, no matter how well they had done their work? Would you take on a new set of foremen and department heads every four years? Such is the law in the State of Washington that no County officer can serve more than two terms in the same position. WHY? Is it to insure efficiency? Nothing farther from it. It is the old "Pie Counter" system under which the BOSSES get together and talk it over. They used to say, "Now Bill, you have had this place for two terms and it pays a fairly good salary, and there is Jim; he has been a good worker and is demanding something, and if he don't get it he will break away. We can't afford to lose his influence, so step aside for a term and let Jim in on the game awhile." Such a system can do nothing less than breed inefficiency and political graft. How long are you going to stand for it? Take as one striking illustration the probate laws of our State. Every property in the State must, in the natural course of events, change hands at least every thirty-five years.

"Take the average assessed value of Counties in this State and they run over \$20,000,000 to the County. The assessed value is less than 50 per cent. of the of real value. The average cost of administering estate is ten per cent. of the estate. Figure this up and see what a useless and wanton waste of property this is and what an outrageous tax on every family in the State. And all this because the legislature refuses to provide some sane method of administering estates, and because of the class that fatten off the misfortune of widows and orphans.

"There is a reason for all these robber rates and excess charges. They feed a parasite class but fall with blighting weight on those least prepared to sustain them and at a time when it should be the concern of the State to conserve the property of her wards. A law can be enacted that would settle all estates at a mere fraction of the present cost and insure its being done without going to court to clear title.

#### Peace and Prosperity.

"The prosperity of peace is enduring, and thank God we can feel that the prosperity that is coming and coming in increasing measure, is the prosperity of peace—or, if war has anything to do with it, that is not of our making. I believe, however, that the war has only a small part to do with our prosperity. It is coming as the results of improved laws that has put the curb on monopoly and given the people a better deal. If this is a sound deduction, then we can feel absolutely sure that slowly, but with irresistible power, the economic forces that have been set in motion will push this prosperity to its fullest measure. And, Brothers and Sisters,

## The Scandinavian American Bank

OF TACOMA, WASHINGTON

With Assets of

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Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

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it is now largely in our hands to make that measure for us steadily larger and larger, until we have all the prosperity that can be ours without robbing someone else of their share by simply carrying forward the work we have set ourselves to do. We do not want to feed on the de-

struction of our brother farmers in Europe, but we do want to fatten on what we can prevent the grafters and monopolists taking from us at home. That is our fight, and these monopolists will embroil us in a foreign war to prevent us winning it, if we don't watch out.

## Does He Earn What He Gets? Does He Get What He Earns?

### "WORK" VS. "POLITICS."

[By W. H. Kaufman.]

Work creates wealth; but politics determines who shall enjoy the good things man created by labor.

To take an extreme case; the slave's work creates wealth; but the law, that is the master's right to the wealth created by the slave, gives the enjoyment to the master and not to the slave.

Work—labor of mind and body—is the source of all wealth; but the distribution of that wealth is very largely a matter of politics, of law and custom. The farmer produces wheat, but when the railroad either charges two prices for hauling it to market; or else practically boycotts the co-operative elevator, why, don't you see, that politics is just as important as work?

The southern farmer raises cotton and the mill hands fashion it into cloth—but the millionaires of the cotton industry neither pick cotton nor tend looms. The millionaires tend Congress, and to get special favors!

Miners dig iron ore from the earth and men in the great iron mills fashion it to human needs. The miners get little more than a slave's keep; the men in the great rolling mills work 12 hours a day for seven days a week, getting 12 to 15 cents per hour.

The millionaires of the iron industry neither dig ore nor swelter before furnace doors. Through congressional action the iron masters get \$10 a ton more than a fair price for all their product.

Farmers need cash loans on their crops in order to be able to hold them awhile and not dump a nation's harvest on the market in a few weeks.

Secretary McAdoo loans \$50,000,000 to bankers at 2½%. Bankers loan it to speculators at 8%. The farmer does the work while the bankers and speculators do the "enjoying" act.

Slaves became free, not by working harder, but through political action.

Our revolutionary forefathers became free, not by working harder to get more money to pay taxes levied by King George, but by political action. Politics may be well defined as the science of determining who shall have the good things of life. Of

course politics doesn't create the good things, but politics surely determines who shall enjoy them after they are created.

### Two Kinds of Politics.

Politics may be either good or bad.

Good politics gives everyone a fair chance to make the most of himself, and protects him in the enjoyment of the wealth created by his labor.

Bad politics means some sort of robbery (however it may be legalized) special privilege; graft; monopoly—getting any good thing from another without rendering a fair equivalent in service.

Good politics means putting a stop to everything of this sort, by making service the sole condition of enjoying any good thing created by human labor.

### Reducing the Golden Rule to Practice.

This is perhaps the best definition of good politics.

A representative of the Department of Agriculture at Washington, D. C., recently spent a day with me. Voicing this same thought he said:

"This work we are engaged in of making two blades of grass grow where only one grew before is the second best sort of work in the world. The best work is politics. You see, Kaufman, even if we get a new sort of wheat that will yield 200 bushels per acre, the main result will be to make the children of our farmers into loafers; for such an increase in the yield of wheat will have no effect at all on the wages of farm help. Neither will it at all benefit the tenant farmer, for his rent will be raised enough to take up all the benefit. The chief effect will be on the price of land, which will advance so much that the farmers' children will rent their land and move to town there to live in idleness. That is why I often think of leaving the Department and going into politics."

### Two Ideals. What to Do.

Personally, and I do believe I speak the sentiments of the great majority of farmers, I would far rather leave my child a "job" than a bank deposit; that is, I would rather be sure my child would have a chance to earn a good living, than insure him a good living without his earning it.



You and I, should make fit our business to spend some time every day informing ourselves as to this great game of politics; which is, primarily, the game of distributing the good things created by human labor. We should take an active interest in practical politics: (a) To encourage industry by insuring steady employment to all and by securing to each the enjoyment of the full product of his labor. (b) We should work for the repeal of every law enabling any man to appropriate the fruits of another's labor without rendering a fair equivalent of personal service.

The editor of this department will take quite as much interest in politics as in better farming; that is aside from instructing in better methods and decreased cost of production serve to protect ourselves from all sorts of unjust practices. Warn against dividends on watered stock just we will against buying cows affected with tuberculosis.

"Unselfish Service" is the keynote of Christianity, and before we can have a Christian nation we must make "service" the essential condition of pleasure—"If any will not work neither shall he eat."

If Brother Tonnerson, as publisher, could make the scheme pay expenses I would like to edit a department of "Service," in which I would, month by month, ask concerning all sorts of incomes "are they fairly earned by service?"

Wouldn't it be interesting to compare the income of a farmer with that of a corporation attorney and see how much each earns and how much each gets?

A ditch digger doubles the value of your farm—getting \$2.50 per day; a speculator gets \$10 because, for a dozen years he held some land idle—which gets the most? Which earns the most? Who is "servant? Who is benefactor without due equivalent?

The sole object of private monopoly is to "get" more than one "earns;" hence we must abolish all private monopoly.

Oh! There are deep question we will have to study!

Interest on fairly earned incomes may be looked on as similar to old age pensions for government employes—as a mere increase of nominal wages. But should anyone be allowed to inherit income producing wealth—that is, should anyone be allowed to inherit power to get good things from his fellows without rendering a fair equivalent in service?

See how quickly we get into deep water?

But are we afraid to think?

Why should we forever avoid anything more puzzling than that two and two are four?

Such a department would be vastly interesting.

Certainly it would pay us farmers to compare notes and see who is shearing us, for the average labor income of the farmers of the United States is set down by the last census at \$1.06 per day.

We "create," but somebody else "gets."

Let's divide the 100,000,000 of our population into groups; farmers; lawyers; teachers; speculators; lobbyists; saloonkeepers; preachers; trained nurses—and apply to each set the acid test.

Does He Get all He Earns? Does He

#### Earn All He Gets.

If the sweepers in Ford's automobile factory create \$5 worth of service every day, surely the average farmer creates more than \$1.06!

With the permission of the the pub-

lisher of this paper I want you to help me find who gets that \$3.94 a day which the average farmer creates but does not get.

W. H. KAUFMAN,  
Bellingham, Wash.

## Ginseng and Golden Seal Culture

Plants Intensively and Profitably  
Grown on Puget Sound.

Inquiries have been made by our subscribers about the cultivation of such medicinal plants as Golden Seal and Ginseng. Several small plants have been made and carried to a partial maturity of crop which requires about 8 years. Of the very few large plants now in cultivation is that of Mr. C. E. Thorpe in the northern Seattle city limits. A representative of the Horticulturist and Dairyman inspected this place recently and was surprised to find over 3½ acres in well cultivated beds under

would indicate a large yield. While it takes 8 years to produce a good crop the revenue derived at the end of that time has reached the enormous figures of from \$8,000 to \$20,000 per acre. The present commercial value of Golden Seal is \$4.50 per pound. It requires four pounds of the green root to make one of the dried.

Golden Seal is used in medicines, and is said to have great curative properties for mucus membrane troubles.

The European countries having listed it in their materia medica are



Slatted roof covering 3½ acres of Golden Seal and Ginseng beds.

slatted roof, and a large part of it out 6 to 8 years, now at the maturity stage. Hydrastis Canadensis, or Golden Seal, requires shade, a long season, and a good leaf mold soil, such as may be found in many spots of the Puget Sound districts. The soil on Mr. Thorpe's place is a good sandy-clay loam, the land having been timbered with alder from which the decomposing leaves create the nourishing leaf mold so essential to this class of vegetation. The plants are grown in beds about 4 feet wide and under shade made from cedar slats, or under the natural shade of the alder trees. A large amount of work and considerable money has been expended by Mr. Thorpe during the 8 years of successful propagation. The plants are all thrifty, clean and

constantly increasing their orders. The powdered root is said to retail, in some of their drug markets, at 75c per ounce, or \$12 per pound. As a medicinal plant for culture it can be compared to chincona bark, the product from which quinine is made.

Mr. Thorpe's demonstration has attracted the attention of horticultural students and he has visitors from the different colleges, from those interested in producing plants for the medical markets, and from many who are interested in intensive methods of cultivation, generally all cordially welcomed and information freely given. His gardens are located in the north eastern part of Seattle, on the west side of 35th Ave., adjoining 85th St. on the north and comprise 40 acres. The Revenna street



Professors and Students from the Washington State University inspecting Golden Seal in the slat covered garden of Mr. Thorpe.

## THE "BOSS" TREE PROTECTOR



Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.

#### PRICES

|                         | Per 1000 |
|-------------------------|----------|
| 10 in. long, 7 in. wide | \$10.00  |
| 12 in. long, 7 in. wide | 11.00    |
| 14 in. long, 7 in. wide | 12.00    |
| 16 in. long, 7 in. wide | 13.50    |
| 18 in. long, 7 in. wide | 15.00    |
| 24 in. long, 7 in. wide | 18.00    |
| 30 in. long, 7 in. wide | 21.00    |

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## ENCLOSED FIND CHECK

Merlin, Oregon, Nov. 9, 1914.  
I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50.

(Signed) H. E. THOMAS.  
"ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

Address

**ORENCO NURSERY CO.**

Orengo, Oregon

Successful Salesmen wanted.

## Kirstin

One man stump pullers cost less, weigh less, more power, variable speeds, ten year service guarantee with every machine. **CALL**

car carries passengers to within one mile of the place.

In the August issue of this journal Mr. Thorpe will give an article on the Cultivation of Hydrastis.

## ENSILAGE CROP

NEAR EVERETT.

Editor, Horticulturist and Dairyman:

As to our experience with silage we have been growing corn on bottom land which is a little cold, and while not so well matured as should be, the silage is fair. By draining the land and raising our own seed, we will produce both quantity and quality in field corn.

We have tried five different varieties of corn, of these King Phillip was the best. This year we are trying Minnesota No. 13, Minnesota King, Early Canada, and a few other varieties. The Minnesota No. 13 seems to be popular in this section.

We sow the corn in drills, with rows from 30 to 36 inches apart, using from 30 to 40 lbs. seed. The corn is cut early in October. We have the Weyerhaeuser silos and a Hocking Valley No. 20 blower cutter, both giving entire satisfaction.

Vetch was tried, a part destroyed by overflow, the part not destroyed after being under the water about a week, made a good crop. In my opinion a valuable spring crop of vetch can be grown by sowing the seed broadcast between the corn



rows just before the last cultivation, provided the ground is moderately moist at that time.

—A. O. ROE.

### BARN YARD FERTILIZERS.

#### Importance and How Best Handled.

Geo. A. Olson, chemist, has given some valuable hints on the preservation and application of farm manure in popular bulletin No. 90, of the State Agricultural Experiment Station, Pullman, Wash.. He figures that although 80% of the fertilizer value is recoverable in barn yard fertilizers, farmers seldom save over 50% of it. One of the main sources of loss is in the liquid excrement through insufficient means to handle it.

About three-fourth of the total nitrogen, four-fifths of the potash, and a small amount of the phosphoric acid, or more than half of the total fertilizer value is in the liquid excrement.

#### Conditions for Preserving Value.

"Experiments that have been conducted in this country as well as abroad plainly show that manure exposed to weather conditions loses anywhere from 30 to 70 per cent. of the valuable constituents in periods ranging from three to twelve months. The variations depending upon the climatic conditions, and the richness of the manure. These losses are due to chemical changes taking place in converting the insoluble into soluble forms, and finally by leaching. It is conservative to state that about one-half of the fertilizer value of manure is lost on the farms in this state through leaching.

"Another loss that takes place as rapidly as that of leaching is known as 'hot fermentation.' This is caused by certain forms of bacteria (aerobic) which can only live in the presence of oxygen. Their activities are greatest in loosely packed heaps and frequently the action is rapid, producing what is known as 'fire-fanged.' Varying with the degree of fermentation the losses may range from 30 to 80 per cent. of the total nitrogen, the potash and phosphoric acid, the less expensive components, not being affected.

"On the other hand if the manure heap is firmly packed so that air cannot enter into it the oxygen thriving bacteria cease to operate and hot fermentation or 'fire-fanged' is impossible. Water appears to check fermentation. For this reason cow and pig manure is less liable to hot fermentation than is the case with either sheep or horse manure which is very dry and open.

"In the compact heap another form of fermentation takes place from that previously described and is caused by organisms that functionate in the absence of air and are known as the anaerobic bacteria. These organisms are essential in transforming the insoluble forms of plant life into the soluble and if the manure is properly cared for the losses will not exceed 10 per cent. of the original quantities present.

"To prevent the loss of urine the gutters back of the animals and the floors of the barns should be made water tight. In case the gutters are built of wood, a coating of pitch, cement, or some other substance impervious to water should be applied. Also plenty of bedding should be used to absorb the urine. Some farmers

cut the straw into fine pieces one to two inches in length to increase its absorbing power.

"The model manure sheds used in this country are those constructed with a good covering and open on the sides large enough for the cattle to move in. A pit is made and the bottom and walls are puddled and pounded, sometimes they are made out of cement. This system prevents loss through leaching. The manure is placed in the pit and as the shed forms a shelter for the animals they will walk and stand on the manure pile, thereby packing the manure down firmly. This prevents hot fermentation. Additions of water will also tend to pack the manure and exclude air. The deep stall methods, such as are common in Holland, have the same essential feature with the exception that there the manure remains in the barn all winter while here it would be out of doors making the barns more sanitary. Any system that will keep the manure moist, compact, and not subject to leaching, will also preserve the larger part of the plant food in the manure."

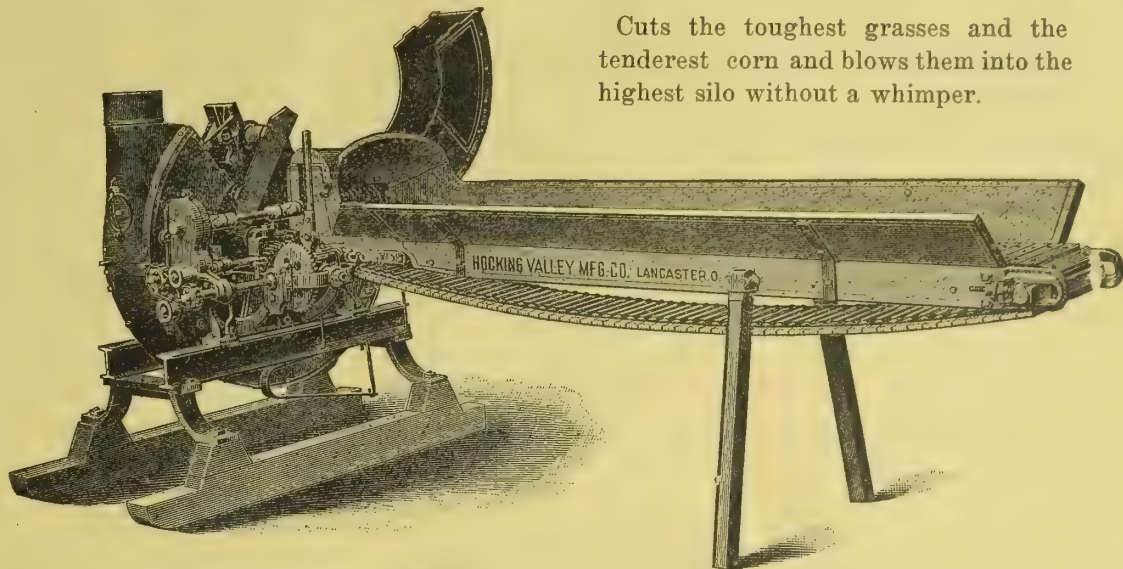
#### Application of Gypsum.

"Applications of one to two pounds of gypsum per animal spread on the floor underneath the bedding has had good results. The ammonia is changed into a form that is not volatile and consequently remains in the manure. Other substances such as superphosphate, kainit, muriate of potash, etc., have also been recommended to prevent the loss of ammonium carbonate, but owing to the possible danger to the hoofs of animals, can hardly be recommended. Neither would it be advisable to use them in the dung pile unless every precaution be exercised to prevent the loss of manurial components through fermentation and leaching. The gypsum has a fertilizing value of its own and when add-

ed in the manner described, will tend to keep up the balance of sulfur which is gradually being depleted in our soils. Sometimes a dry loam dust has been used with good results, care, however, should be exercised that too large quantities are not used as it would tend to make the manure dry and hasten fermentation."

**Relative Value in the Crops.**  
"In approximately \$72,000,000 worth of crops raised in the State of Washington, there was contained over \$31,000,000 worth of fertilizer values. For every dollar received (based on the government values for the crops) there was sold fertilizers valued as follows: For wheat 38 cents; oats

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Will saw 20 to 40 cords of wood per day at a cost of \$1.00. **PULLS ITSELF** up the steepest HILL and over the roughest ground. Costs less than other makes. One man writes he sawed 56 ricks in 10 hours. Another sawed 40 cords in 9 hours. There's more you ought to know. Write for **FREE** catalog containing full description with testimonials from enthusiastic users. **WRITE TODAY.**

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58 cents; corn 43 cents, barley, etc., 44 cents; hay and forage 70 cents; potatoes 15 cents; hops 2 cents; small fruits 3 mills; apples 8 mills; and grapes, nuts, etc., six-tenths of a mill. According to these figures, barley, corn, wheat, in the order named, are the most expensive crops to raise, and the fruits the cheapest from a fertilizer point of view. The reason for this statement can be realized when one considers the margin of profit on his crop in order to maintain the fertility. Consequently the man who believes that he can buy such fertilizers as his land will need at a relatively small figure has not considered the matter seriously because with the depletion of the soil there is a diminution in yield, and as the latter falls the possibilities of buying fertilizers become more remote. This is especially true where the margin of profit is small."

#### ALFALFA MEAL.

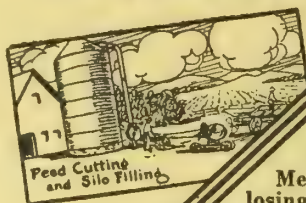
Alfalfa meal is the whole hay, stems and all, ground to a fine meal. It is a concentrate the same as any mill feed and must be fed sparingly. Alfalfa hay is put into the manger, and into the feed box goes a ration of alfalfa meal, perhaps alone, or mixed with oat chop, rolled barley, cottonseed meal, ground corn, or other mill feed. Just enough water is added to moisten it, which restores much of the bright green color. Often molasses is mixed with it.

Tests have been made of the meal and it has been found to be a very valuable feed. All of the fine leafage is there, rich in protein; and the coarse stems, which the animal leaves when eating the hay, is not only eaten when fed as a meal, but is assimilated. It has been found that grinding alfalfa not only increases the total quantity of nutriment available, but when fed with other mill feeds it enables the animal to obtain more nourishment from them because the meal is relishing. Professor Cottrell reports an experiment with dairy cattle where it was found that those fed on alfalfa meal gave 141 pounds of milk to every 100 pounds given by those fed on wheat bran. The meal is usually classed as equal to good wheat bran in nutriment but many prefer it to the bran. It is put up in 100-lb. sacks and usually sells for from \$5 too \$6 a ton more than the hay. From the growers' standpoint, the meal is much more satisfactory to handle than the hay, and is often found to be more profitable and more easily disposed of.

Formerly it was the custom to haul the hay, after being very thoroughly dried, to the nearest stationary mill, have it ground and sacked, then haul the sacked meal home again. This was expensive, not only because it necessitated hiring men and teams, but also because in the handling, much of the fine leafage was broken and lost. About five years ago a portable mill was designed and in districts like interior California, Utah, Nevada, Arizona, and other Western states, this portable mill proved successful and a friend in need. Now the old job of hauling is done away with. The portable mill goes right into the field, grinds up the crop from the stack, then folds itself up again and runs along to the next job.

The portable mill will grind from thirty to forty tons a day. The cost

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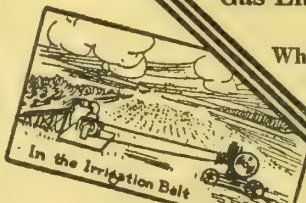
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In the Irrigation Belt



Spraying in the Orchards



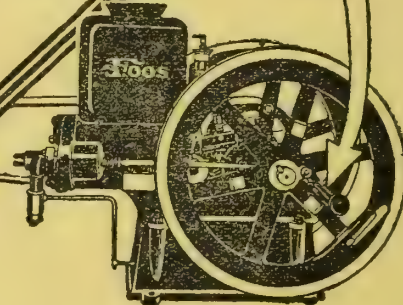
Sawing wood



In the Dairy



THE FOOS ONE-PART GOVERNOR



Botsford

is often under a dollar a ton. Including wages, interest on the investment, depreciation, fuel oil, lubricating oil, gear grease, and repairs, the cost of milling has been found to average about 85 cents a ton. This does not include the cost of sacks, because they can be used over and over.

The operation of the portable mill requires the services of an engineer, stacker, feeder, sack sewer, water boy, sacker, and horse fork boy. Each mill has three feeders, so that if a mixed feed is desired, oat hay may be run in one corn in another, and so on for any combination desired.

L. L. DE BRA.

### WORLD'S WHEAT CROPS.

The International Institute of Agriculture at Rome forecasts the coming world's wheat crop at about 10 per cent. greater than that of last year.

According to that basis the price of grain, while likely to remain firm, will not put the market in this country so very far out of balance.

### AMERICAN FARMER IN POWER.

In Combination Is His Strength, Straightening Paths in Field of Exchange Duty and Greatness.

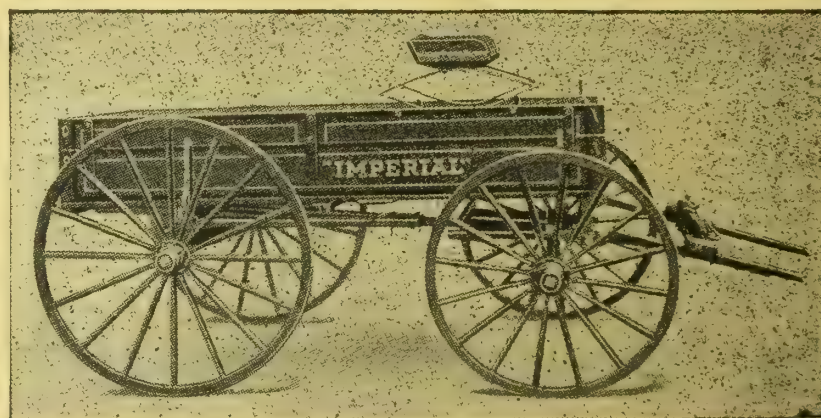
As a delegate to this country from Italy, David Lubin appeared before the committee in agriculture at the last session of Congress, and in the course of his discussions on the marketing of farm products he compared the condition of the American farmer and his opportunity, with that of farmers in other lands, stating:

"Is it a small matter to cut out, as with the surgeons' knife, the cancerous trusts which tend to devour the

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Heavy, well-ironed bent heel shafts, instead of straight heel as shown in illustration. Price .....\$49.50  
Add for gear brake complete .....\$ 6.25  
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conservative, the American farmer, on the one hand, and to eat up the substance of labor on the other, is it a small matter to so purify this Republic, to so eliminate the decaying and destructive influences as to bring to it added strength and perpetuity? Is it a small matter to so conserve the liberties of the American people that they may prove an example, serve as schoolmasters of all the nations of the earth, teaching them what liberty is and what liberty means?

"American orators in speaking to the people on liberty point to the American flag, but is not the flag merely a symbol of liberty? There is a practical phase of liberty as well as a theoretical phase, and the practical phase is no less a reality than is the theoretical. And what is that practical phase? Place a dollar in your hand and contemplate it for a moment. That dollar gives the owner a right to buy a dollar's worth of goods or it gives him the right to enjoy the leisure which the dollar will afford him. The dollar is a measure of so much goods, of so much leisure. The owner of the dollar has the right to a dollar's worth; he has the liberty of a dollar's worth. Is this not so? It certainly is so. And now, what must follow if there are influences at work that tend to diminish the purchasing power of that dollar — influences which work covertly, unjustly? Does it not follow that these influences deprive the owner of the dollar of liberty, and in depriving that owner of his liberty does that not diminish the value of the symbol, the value of the flag? And if we so labor as to do away with this covertness, with this injustice in exchange, does that not strengthen the value of the symbol, the integrity of the American flag?

"This measure then means very much for the American people or it does not. If it means much it affords the opportunity to each member of Congress to convert his potential ability and potential power into real ability and real power. Surely the scope of the work under this resolution is as great an incentive as ever prompted the greatest of historical characters. Up to the twentieth-century our children have been taught to believe that Alexander, Caesar, Hannibal, and Napoleon were the great men. From the twentieth century onward our children will be taught that the conservators of liberty, especially practical liberty, are the great men. The coming great men will be those that will make straight the path in the field of exchange between man and man. This is upbuilding, conserving, whereas the great war-lords are but the wholesale butchers."

### FEDERAL RESERVE ACT.

#### Rural Credit Question Progressing.

The Federal Reserve Act in its relation to agriculture, according to Dr. Clarence J. Owens, managing Director of the Southern Commercial Congress, stated to a meeting of bankers recently that the Federal Reserve Act does not provide for the needs of agricultural business.

Congressmen and farmers have not been fully agreed to the fundamentals of a sound system, but the Rural League of America is conducting a discussion, free and open on all dis-

puted points and a workable measure is in sight.

In the course of his address Dr. Owens said in part:

"Cognizant to the combination of capital and the unionism of labor, it should be our purpose to bring about a greater degree of cooperation in agriculture with which to meet the organized power of wealth and labor and for still greater purpose of maintaining the proper economic balance in the life of the State and the Nation. Agricultural progress and development must include the subjects of finance, production, distribution, and the organization of rural life.

"Through the work of our agricultural schools we will have the teaching of scientific agriculture grow in efficiency, and through extension work, to the home and the farm, we will carry the results attained in the laboratory and through scientific research, and also the achievements of experiment and demonstration. This will include the best thought of the world in the field of intensive and economic production.

#### Improvement in Production and Distribution.

With the lesson taught us by the Old World in the field of distribution and the success here and there in our own land in the marketing of our products, we must perfect a system of distribution of the most practical character in order that our husbandmen may be protected from waste and loss that now results from misguided and misdirected efforts to market their produce. In this connection we must not be unmindful of our national relations, and the need of a clearing house for our states through some such plan as that provided by the joint resolution now pending in the Congress of the United States, providing for a National Marketing Commission to operate along the line of the Landwirtschaftsrat of Germany. We must know also of our own international relations in the interdependence of the countries of the world and the need for a clearing house for the nations as through the International Institute of Agriculture, a federation of fifty-four nations with headquarters in Rome, Italy.

David Lubin, the American Delegate to the Institute, who is credited by King Victor Emmanuel as the founder of the world federation based on agriculture, has arrived in the United States to join with us in our campaign for federal legislation on the question of rural finance. The International Institute, based on agriculture, is the only international body where belligerent countries have not recalled their delegates, thus dignifying the cause of the man on the soil.

"The world's prices for agricultural products must be steadied, and knowledge of world production must be known, as for instance the production of wheat this past season, if our farmers are to intelligently market their crop to the maximum advantage.

"With all that we may achieve in production, distribution and organization it will be of value only as we solve the problem of finance for the American farmer, both as to short-time personal credit and long-time mortgage loans. The farmer must be enabled to be his own regenerator. The provisions of the Federal Reserve Act do not meet this need. Na-



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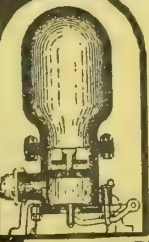
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tional banks are no readier now than before the enactment of the law to make loans on real estate. The vital need of the hour is a system whereby acres of land may be made liquid as a basis of credit for a long-time mortgage loan on the amortization plan. The States will, no doubt, in part meet through legislation the needs of short-time personal credit, but the States must be interested and urge Federal legislation to provide a system of mortgage credit that will meet the requirements of this country and contain the basic features that have been successful in Europe for many years.

"Through some such plan we will make land owners of our fast increas-

ing number of tenant farmers, will attract to our acres the best blood and agricultural ability of other states and other lands, and make possible on this stable foundation the further building up of our agriculture along the most modern lines of production, distributing and organization."



## AMERICAN FIBER FLAX HIGH QUALITY.

Market Conditions a More Serious  
Obstacle than Problems of  
Production.

The common impression that flax fiber of a sufficiently good quality can not be produced in the United States is declared to be quite unfounded, in a new publication of the United States Department of Agriculture, Farmers' Bulletin 669. "On the contrary," says the bulletin, "it has been demonstrated beyond all doubt that fiber flax of excellent quality can be grown in various sections of the United States." Experiments, for instance, have shown that fiber flax from Puget Sound compares very favorably with that produced in the famous flax region of Courtrai, Belgium, and fiber of good quality has also been grown in Minnesota, Wisconsin, and Michigan. Weather records show that the temperature and humidity in the principal flax centers of Europe are much the same as those which prevail in certain sections of New York, Michigan, Wisconsin, Minnesota, Oregon, and Washington.

Nevertheless, there is a belief that the growing of fiber flax—a very different thing from the growing of flaxseed—can not be successfully carried on in America. As a matter of fact, at the present time it can not be( but this is entirely because of market conditions. The individual farmer can grow fiber flax, but he can not prepare the fiber. Flax farmers, of course, could unite to pay for an experienced man to superintend this work for them, but under present conditions it would seem better for them to grow their flax under contract with the dealer. In the past, however, spinners and manufacturers have paid little more than half as much for American fiber as for the imported varieties of equal grade. In consequence, the fiber dealers can not offer the farmer a high price for his product. Possibly this difference in price is due to the belief already mentioned that American flax must necessarily be of a poorer quality than the European. If a salesman should offer two pieces of linen of equal quality to a customer at the same price, the imported article al-

most invariably would be purchased.

On the other hand, the production of flax fiber in Europe has been decreasing for some time, and at the moment the supply is practically cut off. It probably will be several years before the European production is as great as formerly and it appears, therefore, that the present offers opportunities to establish the industry in the United States.

The United States imports annually about 3 million dollars' worth of flax fiber and more than 20 million dollars' worth of linen goods. About one-third of the fiber comes from Russia and about one-fourth from Belgium. Fully three-fourth of the linen imports are Irish. There appears to be no reason why American-grown fiber and American-manufactured linens should not be substituted for at least a large part of these imports.

During the past three years the prices paid to the farmer for flax straw with the seed, drawn directly from the shock, have varied from \$10 to \$17 per ton, and the yield has been about two tons of unthreshed straw per acre. The grower usually receives from \$2 to \$3 more for pulled flax than for cut flax and there is also a large crop when the flax is pulled, thus saving all that would otherwise be wasted as stubble. Up to the present, however, no satisfactory pulling machine has been made and, except where labor can be secured at a comparatively low rate, cutting the flax with a grain binder appears to be the more economical method in this country. In Europe the usual method of harvesting is by hand pulling. This not only increases the quantity of the crop, but prevents the fiber near the cut ends of the straw becoming discolored or otherwise injured.

It is, however, after the straw has been harvested that the real difficulties begin. The preparation of fiber from the straw requires technical knowledge and skill, and can safely be undertaken only by those who are experienced in the work. For this reason, the bulletin already mentioned urges prospective flax growers to make arrangements with dealers for marketing their product or else by means of cooperative associations to secure the services of an expert.

## IRRIGATION

Adequate, available moisture  
at all seasons.

### THE FARM WATER SUPPLY.

By Robert W. Trullinger, Specialist in  
Rural Engineering, from his  
Contribution to 1914 Year  
Book on the Subject of  
Clean Water and  
How to Get It.

"The well is the most commonly used source of farm water supply. It may be a shallow dug or driven well or a deep dug or bored well. It may be said, however, that the majority of shallow dug wells on farms where contamination is present are contaminated; this has been abundantly proven by investigations made by this department and by other Federal and State institutions. The State of Illinois has made rather extended surveys of its farm water supplies, and the report of these surveys shows that out of a large number of

typical shallow wells examined three-fourths were dangerously polluted. The boards of health of Indiana, Minnesota, Missouri, North Carolina, Virginia, and other states have published official statements no less startling. In a large number of cases it is stated that pollution might have been prevented by proper precautionary measures.

Contaminated water is, however, by no means confined to shallow wells. Contaminated surface water often gains access to deep wells at the top in the same manner that it gains access to shallow wells.

#### Preliminary Measures.

Obviously the logical first step in securing a clean well-water supply is to remove all the sources of possible contamination. Among the worst of these are the open privy vault, the leaching cesspool, and the barnyard

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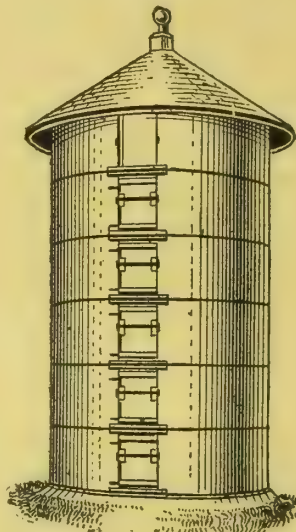
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### C. E. THORPE

R. F. D. 1, Box 300, SEATTLE, WASH.



filth. A well in ordinary pervious soil located lower than, and within 100 feet of, any of these is almost certain to be polluted. Even though the well is located on higher ground than these sources of contamination, heavy pumping or dry weather may so lower the ground-water level that it will reach the zone of contamination and thus pollute the well. It is evident, therefore, that the open privy vault and leaching cesspool should be discarded and a sewage purification system, or at least a sanitary privy, be used instead. Sewage, garbage, manure, or other waste should never be dumped into sinks or fissures, and most certainly never into old abandoned wells. Concrete is a good lining for wells.

#### Running Water in the House.

From the standpoint of convenience, comfort and refinement, the most important considerations in connection with the farm-water supply problem is to have the water under pressure in an elevated tank or in a hydropneumatic tank and available at the turning of a faucet or at least available by merely pumping.

The method of hoisting water from well or spring, pouring into buckets, and carrying it up porch steps and through doors into the kitchen and to other parts of the house is tiresome and wasteful of energy, and is cruelly and in most cases inexcusable primitive, especially as the task of obtaining the water generally falls in such cases upon the women of the household.

An elevated water-supply tank may be placed in the attic, on the roof, on the windmill tower, on a special tower, or on the silo. It must be high enough to give the desired pressure at points where the water is used. The tank may be of wood or galvanized metal. Its size will depend on the amount of water used daily in the house. A 250 to 500 gallon tank is sufficient for the average family, although some have a much larger tank, so that a supply sufficient to last several days may be obtained. A larger tank is also necessary where water is supplied to the house and barns.

The simplest system of this kind is one with the tank in the attic or on the roof supplying water to the kitchen only. When the expense can be afforded a hot-water tank may be placed in the kitchen and the water plumbing be extended to a bathroom.

The pump for this system must be a force pump, which not only raises water to its own level by suction, but forces it to greater heights, according to the power applied. The pump may be placed over the well or in any other convenient spot as long as the suction lift does not exceed 20 feet. The pump may be operated by hand, but where much water is to be pumped to a considerable height a windmill, a small gas engine, or an electric motor will save much time and exertion.

#### The Hydropneumatic System.

For this method a water and air tight tank is placed in the basement or almost anywhere in the immediate vicinity of the house where there is no danger from freezing. The pump preferably is so equipped as to pump a little air at each stroke in addition to the water. At the start of pumping the tank is full of air, but as pumping continues this air is gradually compressed by the entering

water until the required pressure, usually 25 to 40 pounds, is indicated on a pressure gauge.

One pound of pressure will force water approximately 2 feet high in the house, so that for the ordinary house a pressure greater than 40 pounds is not necessary.

For the average family a tank at least 30 inches in diameter and 6 feet long, with a capacity of 220 gallons, is required. At 40 pounds' pressure this tank will be nearly three-fourth full of water and will deliver about 130 gallons to the second story and a greater proportion of the total capacity to the kitchen. A system of this kind, if well installed, affords a satisfactory and convenient water supply available at the turning of a faucet. It is perhaps more expensive than the elevated-tank system, but also does not have many of the objectionable features connected with that system. Water may be pumped for this system by hand, but, as in the elevated-tank system, where the desired pressure is above 20 to 25 lbs., a windmill, small gas engine, or small electric motor is necessary.

A gas engine rated at from  $\frac{1}{2}$  to  $1\frac{1}{4}$  horsepower should be of sufficient power for ordinary farm pumping. It may be connected with the pump directly or by a belt.

#### The Hydraulic Ram.

A spring if properly connected with a hydraulic ram will do double duty, supplying the water and also the power for pumping.

Certain conditions are necessary, however, for the proper operation of such a system. The ram must be located lower than the spring and at the proper distance away. The fall from spring to ram must not be less than 2 feet, and the spring must supply not less than  $\frac{1}{2}$  gallon of water per minute. Most rams are, however, guaranteed to operate on not less than 2 gallons per minute.

The drive pipe is usually twice the size of the delivery pipe and the size of each depends on the size of the ram used. The length of the drive pipe is usually about seven times the height of fall, although this may vary between five and ten, depending on the height and distance to which water is to be delivered. Its length must ordinarily be equal to the vertical height of which the water is lifted and must never be less than three-fourths this height. It is well to add on the average about 2 feet to the length of the drive pipe for every 100 feet the water is carried horizontally. The proportion of water supplied to the ram which is elevated to the point of use will vary according to operating conditions from about two-sevenths for the lower lifts to one-twentieth for the higher lifts. In order to secure their guarantee it is well to follow closely the directions for installation given out by the manufacturers of the ram.

Taken as a whole, the hydraulic-ram pumping system is a very convenient one. Of course it requires a certain amount of watching and care, but the ram is so simple that if properly installed it is easily kept in working order. It operates day and night, winter and summer, whether the wind blows or not, and regardless of the price of gasoline or electricity, and its operation is continuous until stopped. In some respects, therefore, it has the advantage over the windmill and gas engine.



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Kennewick, Wash.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FOMMERSON

### THE JOY OF COMING HOME.

There's joy in sailing outward,  
Though we leave upon the pier  
With faces grieved and wistful  
Our very dearest dear;  
And the sea shall roll between us  
For perhaps a whole round year.

There's joy in climbing mountains,  
In fording rushing brooks,  
In poking into places  
We've read about in books,  
In meeting stranger people  
With unfamiliar looks.

But all the joy of joy is ours,  
Untouched by any pain,  
When we take the home-bound steam-  
er  
And catch the home-bound train;  
There's nothing half so pleasant  
As coming home again.  
—Margaret E. Sangster in Harper's  
Bazar.

### FOR CONTINUED PEACE.

In time of war prepare for peace,  
and in time of peace prepare for its  
continuance is the basic principle of  
operation by the International Con-  
ference of Women Workers to pro-  
mote permanent peace, held at San  
Francisco, July 4th to 7th.

### POWER TO COME BACK.

After a ball game we often hear it  
said, "They're game. They'll practice  
up and try again. There's no down-  
ing them. They'll keep trying till  
they beat."

After every political election some  
defeated candidate is praised with,  
"Oh, they haven't killed him yet. He  
has no idea of giving up. He doesn't  
know when he's beaten."

And at intervals we hear this re-  
mark about some bankrupt man: "Oh,  
he'll come back! It isn't in him to  
give up. He might fail every year,  
but it wouldn't ruin him. His cour-  
age is of the fibre that's imperish-  
able."

The recent fire demolishing the Ed-  
ison factory only spurred the inventor  
to renewed endeavor, the same pa-  
pers chronicling the disaster an-  
nounced his intention of sending to  
England for material to rebuild. He's  
no quitter.

When Mary is learning to make  
cake, if she puts in too much butter  
or too little baking-powder and pro-  
duces a flat failure, she tries to find  
out why the cake fell, that she may  
avoid the same mistake next time.  
Isn't that a braver girl than one who  
refuses to make a second cake?

Austin is studying bookkeeping, but  
he makes mistakes in adding col-  
ums of figures. He determines to  
become more accurate, and perse-  
veres even after seventy times seven  
incorrect trials to make his columns  
balance.

A great poet has said that "men  
may rise on stepping-stones of their  
dead selves to higher things." By  
that he means we may turn our fail-  
ures into successes. How? By learn-  
ing a lesson from past faults, blun-  
ders, mistakes or even sins. Repent,  
which means be sorry enough to do  
better, and begin again. Play the  
game, play up, play up. Don't be a  
quitter, ever. Pick wind, and start  
again for the goal.—Home and School.

### HOBSON AND TEMPERANCE

Hon. Richmond P. Hobson, of Miss-  
issippi, made himself conspicuous be-  
fore the American people when he  
sank the old ship in the channel of  
Santiago, Cuba, seventeen years ago;  
but he has added laurels to his chap-  
let by his strenuous and persistent  
advocacy of temperance and the na-  
tional prohibition of the liquor traf-  
fic. His recent speech in Congress,  
setting forth the nature and the evil  
of alcoholic drink and arguing for the  
entire suppression of the liquor traf-  
fic, is one of the strongest and most  
effective speeches ever delivered on  
the floor of a legislative assembly.  
It was made in the light of the latest  
scientific pronouncements against al-  
cohol as a beverage ever thus far  
put forth, and his treatment of the  
question of a constitutional amend-  
ment was masterly and convincing.  
We are glad that the speech has been  
issued in pamphlet, and is getting  
into the hands of the more intelli-  
gent and influential people of the  
country. It ought to go a long way  
toward convincing the devotee to  
drink that he is committing a sin,  
not only against God, but against  
his own body and soul.—Journal and  
Messenger.

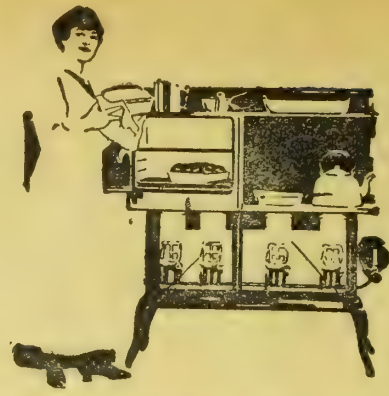
### A LUCKY POCKET-PIECE.

For a girl or the woman who does  
her own sewing, this valuable pocket-  
piece is suggested to keep off the  
"hoodoo" of unwise buying at bargain  
sales.

In a small blank book, set down  
just how many yards of material  
you need for an apron, a cotton shirt-  
waist and a silk one, a dressing-sack,  
a house-dress, simple or elaborate, a  
street suit, a separate skirt, and a  
long coat, using the knowledge you  
have gained in cutting from different  
widths and kinds of material. If you  
make your own underwear, set down  
the amount of goods necessary for  
each piece; also just the amount of  
embroidery or lace required for trim-  
ming. If you are a woman who has a  
family of children, devote a page to  
each child.

Put the pocket-piece in your shop-  
ping-bag, and always have it with  
you. Consult it before you spend  
money at the tempting bargain-coun-  
ter. Even when you buy goods from  
the bolt, having the correct measure-  
ments will save waste; and in buying  
remnants, it will prevent paying out  
money for things you cannot use.  
Many a woman has a drawerful of  
odds and ends picked up at remnant  
sales, which for the lack of perhaps  
only a few inches turned out not to  
be the bargains she thought she was  
getting. On the other hand, over-  
cautious shoppers often lose the  
chance of getting real bargains by  
not being sure of the amount of  
goods they require.

In the clearance sales held by large  
drygoods firms there are many re-  
nants of excellent material that can  
be picked up at a great reduction;  
and there is abundant opportunity to  
save money if you know what you  
need, and just how much goods the  
article requires.—Youth's Companion.



Gas Stove Convenience with Kerosene

## Hot in Your Kitchen?

No need of it if you cook with a  
good oil stove. The heat is concen-  
trated on the cooking—not radiated  
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### New Perfection Oil Cook-Stove

For Best Results Use Pearl Oil

Abundant heat—always ready at the touch of a  
match—like gas. Can be turned out the minute you  
finish cooking. Cooks anything your wood or coal  
range does—and there's no heavy hods to lug—no  
dirt or ashes. No odor. Does not taint the food.  
Ask your dealer. See Exhibit, Palace of Manufac-  
tures, Panama-Pacific Exposition.

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Two 1913, 5-passenger Fords, each \$335.  
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**CHEESE VARIOUSLY USED.**

Of all our foods, cheese is the most compact and concentrated. It contains no connective tissue, bone or waste matter. It is highly nutritive, containing twice as much food value per pound as beefsteak. This same compactness which gives us a food with no waste makes it also harder of digestion unless it is eaten with coarser food which requires mastication. Cheese slips down too easily and that is the main cause of indigestion after eating cheese.

The main reason that cheese is not used as a substantial food is that we housewives are ignorant of its value and so persist in offering it in the same old "tit-bit" fashion.

Try one of these combinations on your family. We predict that everyone will like it:

**Cheese Pudding**—Take two cupfuls of soft bread crumbs, one quart of milk, two eggs, a fourth of a teaspoonful of soda, one teaspoonful of salt, a few dashes of paprika, one tablespoon of butter and two cupfuls of chopped cheese. Scald the crumbs with the milk, and butter, and seasonings, and combine with cheese and eggs slightly beaten. Pour into a buttered baking dish, surround with hot water and bake slowly for an hour in a moderate oven.

**Scalloped Cabbage or Cauliflower and Cheese**—Take three cupfuls of cooked cabbage, one cupful of grated cheese, three cupfuls of white sauce, arrange in layers alternating the vegetable with the sauce and cheese and cover with buttered crumbs. Bake about 30 minutes. Potatoes, brussels sprouts, and other vegetables may be used in the same way. The smallest bit of cheese should never be thrown away. It keeps best if wrapped in a cloth dampened with vinegar or covered with melted paraffin when this is practicable. Grated cheese put into a fruit jar and sealed is ready for any number of dishes which will be improved by the addition of a tablespoon or two, even for flavor.

**Cheese Toast** — Mix cream with grated cheese, season with red pepper and spread on rounds of bread, put two together, sandwich fashion, and saute in a little butter. Serve these for Sunday night luncheon with a salad if so desired.

**Cheese Omelet**—Cook together a teaspoonful of cornstarch and a half cupful of milk. Beat three eggs and stir slowly into the milk. Add a half cup of grated cheese and seasoning of salt and pepper. Melt a tablespoonful of butter in an omelet pan, add the egg mixture and cook carefully. Serve very hot.—University of Wisconsin.

**CONVENIENT AND COZY.**

Helen W. Alwater, assistant in Nutrition Office of Experiment stations gives the following valuable suggestions in her contribution under the subject, "Selection of Household Equipment" in the 1915 yearbook.

"A table of easy working height probably costs no more than one too high or too low, nor would making wooden blocks to set under the legs of a low one be an impossible expense; yet a difference of a few inches may mean the difference between working easily and getting tired every day. Increasing the convenience of working by such simple means as moving a table or stove or

rearranging the kitchen cupboards or kitchen cabinet may make a noticeable difference in the number of movements necessary for the daily work, and this saving of energy not only lessens the labor, but also prevents the irritation which an intelligent person naturally feels at wasteful effort.

"As far as the element of pleasure or beauty is concerned, it is the necessary thing rather than special ornaments which make the greatest difference in the attractiveness of a home. Comfortable furniture of good plain design and harmonious colors on the walls and floors are more necessary to make a house restful and pleasant than many pictures and much bric-a-brac. Fortunately, it need not cost any more to get these necessary things in satisfactory forms than in poor ones, though it may mean choosing more slowly and carefully."

**CANNING BERRIES.**

To preserve to a high degree the flavor and color of berries the sterilizing process has been used successfully. Red raspberries were canned last season and the flavor retained, almost equal to the fresh berries. The method employed is to fill jars with ripe berries, then pour over them a hot syrup made of granulated sugar and water. Seal the jars and place them in a boiler and cover them with boiling water, pouring slowly at first to prevent breaking the glass. Put lid on the boiler and let stand over night or until cold. Remove the jars and see that the lids are tight, then store away in a cool dark place.

**SALT FOR WOUNDS.**

The latest method of treating war wounds goes back to the practice that used to prevail among sailors, who employed salt water, sometimes applied to the injured part, but often to the whole body, that is, by soaking in sea water. The immediate effect of the treatment is to relieve septic conditions arising from infection of wounds, and a most informing recent account of it is given in a memorandum on the bacterial infections of projectile wounds, which is issued by the British Army Medical service for guidance of the army physicians and surgeons. It is signed by two of the greatest bacteriologists in England. It emphasizes the necessity of free drainage and its encouragement by the application of saline solutions, especially in the case of artillery wounds, which are apt to be deep and accompanied by much laceration of muscles and bones.

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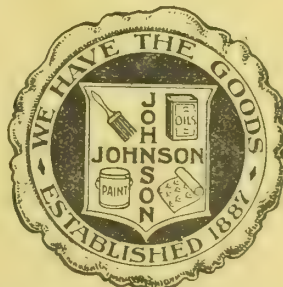
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|---------------|---------------|---------------|
| 100 Rooms     | 150 Rooms     | 150 Rooms     |
| <b>\$2.50</b> | <b>\$3.00</b> | <b>\$3.50</b> |
| 100 Rooms     | 100 Rooms     | 100 Rooms     |
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Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

(Address any inquiries about dairying to H. L. Blanchard, Asst. Supt. Exp. Station, Puyallup, Wash.)

### FACTORS IN THE COST OF MILK.

Duplication of Effort in Delivery An Economic Waste. Producer, Distributor and Consumer Suffer from Present-day Methods of Handling Milk.

Milk-wagon routes in large cities retrace and "crisscross" one another, thus adding to the cost of distribution; this duplication of effort has a direct bearing on the retail price of milk, as it increases the expenses of the milk dealers. On the other hand it is also a tax upon the farmer, for it tends to keep down the price paid for milk on the farm. It must be understood, however, that much of the waste in milk delivery, under the present system, can not be entirely prevented, because there are so many dealers in each locality, and competition is keen. According to the dairy experts of the United States Department of Agriculture, efforts should be made, nevertheless, by the dealers, to concentrate their business as much as possible so as to lessen the distance traveled by the wagon for each quart of milk delivered, by securing a large number of customers in a small area.

In the District of Columbia 98 routes were measured. The shortest distance traveled by any wagon was 10.4 miles, and the longest was 30, showing a considerable variation. The average distance for the 98 wagons was 19.1 miles. When these measurements were made there were approximately 510 miles of streets in the district and 250 wagons were making the retail deliveries of milk. Figuring that each of these wagons traveled 19.1 miles, they all covered 4,775 miles each day, or 9.3 times the sum of all the streets in the district. Thus the time of about 8 of every 9 wagons was used uneconomically. More than 80 dealers were making the deliveries.

### GUERNSEYS WHICH

#### ARE PROFITABLE.

As an example of the prolificacy of the Guernsey breed the following concerning Lily Bell of Canterbury 11352, who is now 22 years old, with a record of eighteen calves will prove interesting.

This grand old cow was bred by J. Arthur Jones, of Hopkinton, N. H., and was purchased as a young calf for \$15 by the Canterbury Shakers. She has proven the foundation of their present Guernsey herd. She has never had more than one calf at a time, but has produced 18 calves, 7 of which have been females, and has 53 grand-daughters among whom was the well known show cow, Glencoe's Bopeep. She has 82 great granddaughters, 30 grandsons and 70 great grandsons. One of her daughters, Lily Bell of Canterbury 3d, has had 14 calves. She has never been sick a day in her life, has never lost a calf or had any udder trouble, and

is due to calve soon.

She has always been a consistent and persistent milker at the pail. When twelve years old she was given a churn test and produced an average of 45 lbs. of milk per day for 7 days from which was made a trifle over 24 lbs. of butter.

As an example of prolificacy and retained vigor of Guernsey sires, Prince of Groton 9841 A. R., born in 1902, and owned at Mixer Farms, Hardwick, Mass., has sired 119 pure bred sons and 109 pure bred daughters of which 18 sons and 81 daughters are registered. He sired besides these a large number of grade.

Seven foundation animals in a Maryland herd, representing an investment of \$1975 have an average record of 12951 lbs. of milk and 651 lbs. of butter fat, and bull calves have been sold for \$2775. The female calves have been retained in the herd and now number 33.

A. G. C. C.

### THE BABCOCK TEST.

The Babcock Test and scales are instruments for ascertaining the correct value of the dairy cow with reference to her milk and butter fat production. The test is simple, accurate and easily mastered by anyone who will give the matter careful study and attention, taking the necessary time for the work. Those who prefer not to devote the time should join a cow testing association, for it does not pay to keep unprofitable cows.

A small 4 bottle tester with glassware and full directions can be secured for about \$5, of any creamery supply company.

### AYRSHIRE CHAMPION AT TWO YEARS.

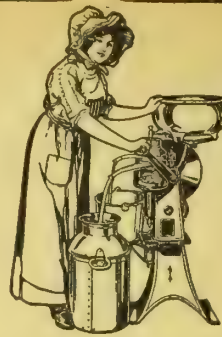
Henderson's Dairy Gem 35175, bred by Hill Top Farm, Wheeling, W. Va., owned by Henderson's Dairy Farm, Hudson, O., has completed her year's test for advanced registry with the official record as a senior two year old of 17,974 lbs. milk, 738.32 lbs. of fat, 4.11 per cent. fat, making her the senior Ayrshire two year old Champion of the world.

This record is an interesting study in breeding for a purpose, whether it was done by accident or design, I cannot say, but it illustrates what we have always claimed, that when Ayrshires that had proved themselves producers were coupled we might expect phenomenal records.

The sire of this heifer is Rena's Champion, a young bull with two advanced registry daughters already to his credit, his sire is Finlayston, with 39 advanced registry daughters to his credit.

The dam of Rena's Champion is Rena Ross with an official record of 15072 lbs. of milk, 462.86 lbs. of fat, 4.26 per cent. fat.

The dam of Henderson's Dairy Gem is Dairy Gem, with a three year old record of 14,425 lbs. of milk, 533.55 lbs. of fat, 3.7% fat. She was sired



## You need a new DE LAVAL SEPARATOR NOW

### 1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREATEST value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves. BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

### 2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF the poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE AN IMPROVED DE Laval is so much simpler and

more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL Separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as

## DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## COTTONWOOD GROVE STOCK FARM

### CHOICE HOLSTEINS



Some fine young bulls to offer out of Homestead Jr. De Kol and Butter Boy 3rd breeding, sired by Dutchland Sir Fayne Colanthe, whose dam and sire's dam average 30.76 lbs. butter in 7 days, 122.93 lbs. in 30 days; brother to Grace Fayne 2nd Homestead, former world's champion. His three sisters averaged over 33 tons milk in one year. Health, condition and breeding all guaranteed. Prices reasonable. Please mention this paper when writing.

**ALBERT JOHNSON**  
SCAPPOOSE, OREGON

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## LAKE SIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

**P. A. FRANKS**

**Scappoose, Oregon**

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

**IRA P. WHITNEY, Supt.**

**Route 7, Spokane, Wash.**



by Howie's Dairy King, with 20 daughters to his credit, out of Drummond's Gem, with an official record of 10,841 lbs. of milk, 388.60 lbs. fat, 3.58% fat.

The above illustrates the value of advanced registry work with any breed of dairy cattle, and should be an incentive to Ayrshire breeders to breed by method, not by chance.

C. M. WINSLOW, Secretary,  
Brandon, Vermont.

## SECOND SALE OF REGISTERED HOLSTEINS.

At a meeting of the members of the Western Washington Holstein Breeder's Association, held at Everett, on June 24th, it was decided to hold the next Semi-Annual sale on September 15, 1915, on the Snohomish County Fair Grounds, at Snohomish, Wash. Seventy-five Holsteins—"The Best in the West"—will be sold at this sale. Wm. Bishop, Chimacum; J. H. Hulbert, Mt. Vernon; Herman Steffen, Monroe; J. C. Burnam, Snohomish; Guy M. Richards, Greenbank; and A. B. Winter, secretary-Treasurer, Everett, are the committee appointed to manage the sale. New members elected to the Association are A. H. Buck, Dr. H. K. Stockwell and Albert Steffen, Monroe, and A. Benson, Lynden.

GUY M. RICHARDS.

## GUERNSEY COWS MAKE GOOD RECORDS.

In studying the records which come into the American Guernsey Cattle Club office it is extremely interesting to note the trend which they are taking as indicated by the gradually widening difference between their average and the average for the breed.

A bunch of cards containing the reports of the last 57 records to be completed contain some interesting and significant facts. Of this number 15 were for heifers who had just completed their first lactation period. Three of these heifers produced over 100 lbs. of butter fat, their records being 587.06, 565.98 and 515.52 lbs. of fat respectively.

Of the 42 records representing the production of cows who have had more than one calf, 2 are over 800 lbs. of fat, 4 are between 700 and 800, 12 between 600 and 700; 12 between 500 and 600, 16 between 400 and 500, 12 between 350 and 400 lbs.

The two cows who produced over 100 lbs. of fat each have two previous official records. One cow's breeding and production record is as follows: Born in 1906 she calved in 1908 and produced during the year an official test 428 lbs. of fat. Further calves from this cow are registered in 1909, 1910 and 1911, when she was again entered in the official testing work and produced 526.83 lbs. of fat. She calved again early in 1913 and again in 1914, when she was entered for her third record, just completed, of 14,671.4 lbs. of milk and 544 lbs. of fat.

The other cow who produced over 100 lbs. of fat finished recently also, her record being 16,507.10 lbs. of milk and 867.89 lbs. of fat. She was also born in 1906, and calved in 1908, producing that year an official test 594 lbs. of fat. She calved regularly in 1910, 1911 and 1912 and in the last year mentioned was again put on official test when she produced 714.60 lbs. of fat, com-

pleting her record in August, 1913. In December of the same year she calved again and was again put on test when she produced her last record mentioned above of 867.89 lbs. of fat.

The average of the entire 57 records is 505.30 lbs. of butter fat while the average for the breed is 434.33. The impetus which Advanced Register testing seems to have received in the past few years, and the development of improved methods of feeding would indicate that the possibilities of the breed are just beginning to be brought out and the average production will undoubtedly be raised at a faster rate in the future than has been the case in the past. This is but another remarkable evidence of the ability of the Guernsey cow to make good under fire.

A. G. C. C.

## GOOD JERSEY HERD AT PULLMAN

H. H. Curtis of Pullman, Wash., paid \$500 for the Jersey cow St. Maw's W. Rosaire, and \$700 for the Jersey bull whose dam produced 1880 lbs. butter in two years, to Mr. Ed Cary, of Oregon.

Mr. Curtis has one heifer from J. B. Early, fresh at twenty months. She is also on test and produced 45 lbs. of butter in 1 month, according to the Rural Spirit. Mr. Curtis has a dairy of about 35 head, but is gradually getting into pure-bred Jerseys, with Willamette Valley stock for a foundation. He wants to build up on only first class Jerseys. While he has a 400-acre wheat ranch, he is working into diversified farming and is growing corn, clover, etc. He has a magnificent, well arranged big barn and two silos.

## BUTTER FAT PRICES AND COMPLAINERS.

A. J. Lashbrook, dairy specialist who recently organized a cow testing association in the Ahtanum Valley writes the Horticulturist and Dairyman that farmers generally who complain most about prices of butter fat and the treatment creamery companies give them, are the ones who are hardest to convince that they ought to produce a higher grade of cream, that better butter could be made from it which should bring more on the market.

Strenuous efforts are being made by Mr. Lashbrook to teach farmers the need of more painstaking methods in their work at dairying. Positive cleanliness is a condition not well understood by too large a number of dairy farmers to their own discomfort and financial loss. Mr. Lashbrook advocates the plan of paying for cream on the basis of quality, is trying to get the farmers to see its fairness and advantages, especially those who are patrons of co-operative creameries. In too many cases dairy farmers consider their own cream of top quality without regard to the actual condition and if their product is rated second grade they are too ready to quit and sell to another. Low butterfat prices and complainers are both undesirable, but conditions are being changed through a gradual process.

## OIL MEAL FEEDS.

Melting Point of Butter Influenced.

It has been definitely ascertained according to R. V. Wright, of the Ore-

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312. Our senior 2 year old Phlebe Cornucopia, produced 101.9 lbs. milk in one day 24.5 lbs. butter in 7 days. 12 cows of our herd have record of over 100 lbs. milk per day. Herd bulls Duke of Deer Banks and Duke Manary Newman, son of Margie Newman. Those wanting high record foundation stock will please correspond or call.

C. E. ELDRIDGE,  
CHIMACUM,  
WASH.

Kindly mention this paper

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

## Registered and High Grade Holsteins

We are constantly preparing to supply the needs of dairymen in the northwest with Registered and High Grade Holsteins, the kind which affords buyers the highest measure of satisfaction in production. Tuberculin tested. Specify your wants and write for particulars.

E. H. THOMPSON, Mt. Vernon, Wash.

## Holstein Home Herd

Watch this space from month to month for what we have to sell this year. Young cows and heifers bred to Mutual Fobes Longfield De Kol, No. 82959, the Grand Champion bull at the Washington State Fairs, 1913 and 1914, and a few choice ones bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old.

E. B. MARKS

Route 5, NORTH YAKIMA, Wash.

## GLENDALE CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

GLENDALE CREAMERY CO.,

D. S. Troy, Manager.

Chimacum, Wash.

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.



## VALLEY VIEW DAIRY FARM

Registered Holstein bull calves of all ages for sale. Calves sired by Mutual Fobes Longfield De Kol and Annie De Kol Lakeside Model. Both proven sires with better than 30 lb. dams and better than 30 lb. sisters. Both are show animals as well and of high class. Also some females of all ages for sale.

For particulars, description and price, write,

H. C. DAVIS,

Granger, Wash.



gon Agricultural College, that cotton-seed meal increases the quantity of butter fat.

"It increases to a marked degree the melting point of butter. It diminishes the volatile acids content and produces but little change in specific gravity. New York experiments show that the average melting point of butterfat from cows fed bran was 93 degrees while that from cows fed cotton-seed meal it was 99 degrees F. The Texas station reports show the average melting point of butterfat from cows fed cotton-seed meal to be 105 degrees F. The practical effect of this is that the butter will have increased firmness and remain in better conditions when handled and shipped in hot weather.

"Feeding cotton-seed meal to cows on pasture is a very good practice for it has a tendency to harden the butter and increase the melting point. The richness of cotton-seed meal in albuminoids renders it of prime importance to mix with one or more feed stuffs poor in this nitrogenous compound such as ensilage and hays. If fed to excess the meal will injure the health of the cow and diminish the quality of the butter."

When too much potato is fed the churning takes a longer time. In one experiment it took 86 minutes to churn cream from potato fed cows compared with 36 minutes churning cream from mangel fed cows. The cows ration should be made up to include variety, not too much of any one concentrate.

#### HOLSTEIN FRIESIAN ASSOCIATION OF AMERICA.

The 30th annual meeting of the Holstein-Friesian Association of America was held in the auditorium of the Y. M. C. A. building at Syracuse, N. Y., last month, President D. D. Aitken of Flint, Mich., presiding. The attendance was the largest ever present at one of these meetings and included about 20 women. All the proceedings were marked by unanimity of thought and action.

Treasurer Wing R. Smith presented his 18th annual report with great satisfaction, both to himself and to his hearers, on account of the exceptional progress and financial success which it showed, in spite of the depressing experiences of the past year. In addition to the figures showing the transactions of his office, he gave a few excellent admonitions against the time of reverse fortune which comes sooner or later to all. His report showed cash receipts for the year \$346,034.22; disbursements, \$176,198.63; cash balance April 30, 1915, \$169,835.59, of which \$157,530.82 is in the reserve fund.

The report of the auditor, R. R. De Bergh of New York City was a very interesting and clearly defined presentation of the entire business of the year together with the resources and standing of the association. It showed total assets of \$311,186.57 with liabilities of \$202,551.77. Total expenses for the year, \$156,238.47, with total income \$201,697.54—an excess of income over expenses for the year ending April 30, 1915, of \$45,459.07.

The report of Secretary F. L. Houghton showed that 135,280 certificates have been issued from his office during the year, a gain of 29,981 over the number issued in 1914.

Total cash receipts of his office were \$177,392.88, with disbursements of \$111,208.98. A total of 1208 new members were admitted during the fiscal year, exceeding by 97 the number admitted in 1914; making the grand total of members on April 30th last, 7724.

President, D. D. Aitken, Flint, Mich.; vice-president, Dr. Henry Baird Favill, Chicago; treasurer, Wing R. Smith, Syracuse, N. Y.; superintendent of advanced registry, Malcolm H. Gardner, Delavan, Wis.; secretary, Frederick L. Houghton, Brattleboro, Vt. The directors are: A. A. Cortel-you, Somerville, N. J.; John B. Irwin, Minneapolis, Minn.; W. A. Matteson, Utica, N. Y.; G. A. Dimoc, Kalamazoo, Mich.; W. B. Barney, Chapin, Ia.; F. F. Field, Brockton, Mass.; W. W. Stevens, Liverpool, N. Y.; George E. Van Hagen, Barrington, Ill.; and A. L. Brockway, Syracuse, N. Y.

The next annual meeting will be held in Detroit, Mich., the first Wednesday in June, 1916.

#### THE GUERNSEY COW

is popular among dairy-men who appreciate that that

#### ECONOMICAL PRODUCTION

richness and fine flavor of products lead to larger profits.

#### A GUERNSEY BULL

is a sure way to increase your profits. Grade up your Herd by using a pure bred Guernsey Bull and you will be surprised at the results.

Send for free literature.

GUERNSEY CATTLE CLUB  
Box 20, Peterboro, N. H.

#### JERSEY BULLS FOR SALE

from Pogis Torono Stock of HOOD FARM

A few high class young bulls for sale. Sired by Torono's Olinda's Pogis, a grandson of Pogis 9th and Torono of Hood Farm. These bulls have a larger number of cows in the 800-pound butter class than any Jerseys in the world. Also two pure bred registered Percheron stallions by Surugua, Champion of Alaska-Pacific Exposition. They are full brothers two and three years old, solid black; none better can be bought. Will sell on terms.

Charles Richardson  
Richmore Farms, R.F.D. So. Tacoma

#### HOLSTEIN SIRES

Some splendid registered bulls for sale out of Lunde Artis, Requisite 3rd and Karel Bos breeding. Write for full particulars as to pedigree and prices which are reasonable.

CHERRY VALLEY STOCK FARM  
A. P. Malloy, Prop.  
Monroe, Wash., R. D. 1

#### Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.



## Puget Sound Herd Holsteins

HERD SIRES—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

Five first daughters of Quirinus Cornucopia tested at an average age of 2 years 1 month, have made records that average 19.5 lbs. butter in 7 days, 2000 lbs. milk and 76.1 lbs. butter in 30 days. One 2-year-old in the yearly test produced in 9 months 17,915 lbs. milk and 725 lbs. butter.

Sir Chimacum Wayne is the world's greatest milk and butter bull. His sons up to 5 months of age are now being offered for sale. Our herd numbers 250 head and we can supply registered stock for foundation herds and for good working dairy herds at right prices.

WM. BISHOP, Prop.  
Chimacum, Wash.

## BORTFELDER TURNIP

Finest of the turnips for table use and very excellent for live stock. A great yielder on well prepared soil where it grows 12 to 18 inches in size. Plant in June, July or August, but the earlier the better. We can supply a certain amount of the seed at the rate of 50 cents per pound post paid.

Aabling-Ebright Seed Co.  
89 Pike St. Seattle, Wash.

## Cascade International Stock Show

Will Advise You Where You Can Buy

GENERAL UTILITY ANIMALS as well as REGISTERED SIRES AND DAMS

A. J. SPLAWN, President.

For Information Write

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

## OLYMPIA'S FERN

Taste Satsop Cheese

E. L. BREWER

Gave 409.2 lbs. milk in 7 days with an average test of 8.413% fat, thereby making over 40 lbs. 85% butter. Some bulls strong in her blood priced to sell. Heifers from R. of M. dams to offer.

Satsop, Wash.

LA CONNER FLATS STOCK FARM

#### REGISTERED HOLSTEIN CATTLE

Our service sire, Segis Pontiac Acme, has dam, grandam and great grandam with average year's A. R. O. records of over 24,000 lbs. milk and 1080 lbs. butter. A few choice young bulls from tested dams.

Also Duroc Swine

J. H. HULBERT, JR.

MT. VERNON, WASH.

FARM LANDS—In Central Washington, improved and unimproved. Particulars on application. References: H. B. CARROLL, Ellensburg, Wash.

GOOD REGISTERED BERKSHIRES—Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.



## INTERNATIONAL MILK AND CREAM SHOW.

Live Stock Department. P. P. I. E., holds largest known milk and cream show.

The International Milk and Cream Show which was held by the Panama-Pacific International Exposition at San Francisco, June 14-19, 1915, attracted the attention of hundreds of the best producers and dealers of milk and cream to be found in the United States and Canada. There were nearly 2,500 bottles entered. Twenty-five states and various portions of Canada were represented. Milk and cream was shipped from as far east as Boston and New Hampshire, as far north as Toronto and British Columbia, as far south as El Paso, Texas, and throughout the Central West and West. Practically every large city was represented by individual exhibits, by firms, or officially represented by the City Boards of Health or Milk Commissions. The largest single entry was made by the Portland, Oregon, Board of Health with a total of 136 different exhibitors.

Prof. L. N. Davis of the University Farm, Davis, Cal., superintended the show and assisted with the judging and the various tests. The judges were Dr. C. L. Roadhouse of the University of California, Dr. George Hart of the Los Angeles Board of Health, and Prof. H. H. Douglas of the University Farm.

All samples, no matter what class they were to compete in, were all produced on the same day. They were then iced and packed and shipped to the Exposition, where they were held in cold storage until the day of examination. Each sample was tested carefully and the judges and superintendent Davis deserve great credit for the creditable manner in which they handled and judged the largest show of the kind ever held. The following points were considered, and the percentage allowed for each division was as shown:

|                             |     |
|-----------------------------|-----|
| Bacteria .....              | 35  |
| Visible Dirt .....          | 10  |
| Fat (Cream) .....           | 20  |
| Acidity .....               | 5   |
| Flavor and Odor .....       | 25  |
| Fat, (Milk) .....           | 10  |
| Solids not fat (Milk) ..... | 10  |
| Bottle and Cap .....        | 5   |
| Perfect Score .....         | 100 |

It is rather remarkable that milk and cream should be produced and then packed and shipped a distance of three thousand miles, and after being held a week, the bacterial count still be below 100. The fact that such a high grade of milk and cream was exhibited by producers and dealers far and near, and the fact that the show was several times larger than anticipated, speaks volumes for the great interest which is being manifested in all parts of the country in the various branches of the dairy industry, and for the good work being done by Boards of Health, Milk Commissions, and Agricultural Colleges and Experiment Stations, several of which made splendid exhibits in this great show.

Gold medals in leading classes were awarded as follows:

**Market Milk Producers' Class**—1st prize, Glen Gables Farms, Wysbrooks, Pa.; score 97.

**Market Cream Producers Class**—1st prize, P. O. Ekman, Enumclaw, Wash.; score 96.5.

**Pasteurized Milk Class**—1st prize, Kell's Dairy, Stockton, Cal.; score 95.7.

**Pasteurized Cream Class**—1st prize, Hazlewood Co., Spokane, Wash, score 96.9.

**Certified Milk Class**—1st prize, Walker Gordon Co., Detroit, Mich.; score 97.

**Certified Cream Class**—1st prize, S. Price & Sons, Toronto, Canada; score 92.8.

**Milk Dealers Class**, (Ten or more producers)—1st prize, Pure Milk & Cream Co., Portland, Ore.; score 94.3.

**Cream Dealers' Class**, (Ten or more producers)—1st prize, Enumclaw Co-operative Creamery Co., Enumclaw, Wash.; score 93.

## DAIRYING IN SHOHOMISH VALLEY.

Steffen's Pure bred Holsteins.

Clover fields, meadows composed of the rye grasses, fescues, orchard and other mixed grasses, timothy and clover, also fields of vetch and oats and numerous patches of corn are seen in the Snohomish valley beginning at Everett, and extending towards the mountain ranges beyond Monroe. As an illustration of the development of dairying in this valley, Mr. Herman Steffen may be cited as an example of several who are working unitedly together in a manner insuring success.

About fifteen years ago Mr. Steffen located on his present farm, about 2 miles from Monroe, which town at that time was just starting with a box car for a depot. He was determined to build up a dairy farm and during the first few years progress was slow, but some good Holsteins were obtained and the herd was gradually enlarged. At the end of six years Mr. Steffen, seeing the increasing market caused by the condensaries and the growing Puget Sound cities, figured that it would be only a short time until hundreds of others would start with dairy operations in this fertile valley and in such portions of the uplands as are suitable for grass crops, then the question of a ready supply of dairy cattle of known satisfactory producing capacity presented itself. A little attention in the beginning to the weighting of milk and the butter fat test soon convinced Mr. Steffen of the great difference between individual cows for profit and the value of sires whose records were of known merit.

He determined then to raise Holsteins of known producing capacity and value and that meant pure-breds. The high grades were gradually sold and replaced with pure-breds. The demand for good stock kept on increasing until about two years ago Mr. Steffen was compelled to make a trip east and at an expenditure of between \$8000 and \$10,000 purchase a car load selected from the best pure-bred herds in Minnesota.

These soon became acclimated and have increased in numbers making up the present herd of 65 registered cattle among which are some splendid types and heavy producers. A fine 2-year heifer, Korndyke Buts DeKol, has a 7 day butter record of 21 lbs. butter, very promising for a 28 lb. cow at full age. The cow Sadie Colantha B, has a record of 97 pounds milk a day. Most of the cows in this herd are in the advanced registry

# Our Special DOLLAR OFFER

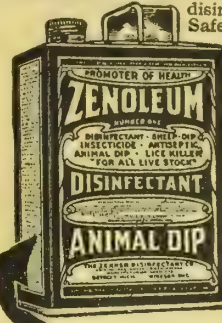
to Livestock Owners

**To Prove What ZENOLEUM Will Do!**

Here's an opportunity to test Zenoleum as a disinfectant, germicide and destroyer of lice, mites, ticks, for skin trouble, wounds, sores, etc., etc., on an absolutely money-back offer. Send a dollar bill for can containing enough Zenoleum postpaid, to make 60 gallons of positive disinfectant. Full gallon can, enough to make 100 gallons for \$1.50, postpaid. Use it and watch results and if it doesn't prove to be all we claim, your money will be refunded promptly; no talk back. Just money back.

**King of Disinfectants—Worth Fifty Times Its Cost**

Zenoleum is used and recommended by 50 agricultural colleges. It is a coal-tar disinfectant, insecticide and animal dip, always the same. Safe and sure; will not burn or poison.



**ZENNER'S VETERINARY ADVISER**

**FREE** This 64-page illustrated book tells all about the prevention and cure of all live stock and poultry diseases. It is a standard authority, giving invaluable information in condensed and useful form.

**Pin a Dollar Bill to this Free Trial Money-Back Coupon**

Learn why the greatest breeders and live stock authorities pin their faith to Zenoleum. Your dollar back if Zenoleum doesn't more than make good.

**Coupon**

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Please send free copy of Zenner's Veterinary Adviser.

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☐ Make check mark in the square if you enclose dollar for trial can of Zenoleum. Satisfaction guaranteed or money back.

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

## HEAD YOUR HERD

with a grandson of the mighty **KING OF THE PONTIACS**, the leading Holstein-Friesian sire of the World, through his promising young son **KING KORNDYKE PIETERTJE PONTIAC**.

A nice lot of young bulls for sale from large record A. R. O. cows, such as Ophelia Sanesta Pauline, 29.46 pounds; Josephine Duchess, 29.12 pounds, and 23 others with records above 20 pounds.

**GREENBANK FARM**

Greenbank, Washington

Calvin Philips,  
President

Guy M. Richards,  
Manager

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SALE

You can make some very choice selections in our herd of fresh young cows which will become very heavy milkers at mature age. They are in excellent order, a large number on hand from which to choose. They have pure bred sires, with good producers back on both sides, and their type and daily milk yield is evidence of quality. Health guaranteed.

For further particulars and prices write or call.

**F. F. FOLSOM**  
**KENT WASH.**





[Holstein heifer Star Edgely Cornucopia, 259199, close relative to a 40-pound cow in the Steffen herd.]

class and produce above 20 lbs. butter a week, several having a record of 22 lbs. and above.

One of the herd bulls is Sir Korn-dyke Hengervold Madigal 8th, whose sire's dam has a butter record of 25.9 lbs. His dam is Fanny Jewel Hengervold 2nd, A. R. O., with butter record of 24.35 lbs. in 7 days.

A fine bunch of male calves are of King Korndyke and DeKol breeding, with records of 29 to 35 lbs. cows back on both sides. There are also several youngsters of Karel Edgely Cornucopia and Jewel of Chimacum breeding, close relatives of Margie Newman, the famous 136 lb. milk per day cow.

The Steffen farm contains 160 acres, more than half of which is bottom land, cleared and well cropped. The pasture is good and there are excellent oat and vetch crops, also corn maturing for the silo. There is ample roofing to afford shelter for all stock during inclement weather, and the barns are kept in a good sanitary condition.

A considerable number of the patrons of the condensary at Monroe are figuring on increasing their herds, and will be in the market for the class of males bred by Mr. Steffen and while they are fortunate for neighborly work and skill in breeding, the supply is limited. Some of them are preparing to make direct selections, others are getting ready to buy at the sale to be held at Snohomish on September 15th. The entire family, including son and daughter, nearly grown, and Mrs. Steffen, all take interest in the development of this fine pure-bred herd of Holsteins, and here is good remuneration for painstaking efforts.

### WORLD'S NEW DAIRY RECORD.

Chas. Eldridge's, Jr., 2-year old heifer produces over 100 lbs. in 24 hours. Chimacum, Wash., June 27, 1915.

Editor Northwest Horticulturist and Dairyman—It will be of interest to your readers, no doubt, to learn of the work of two heifers, one making a new world's record in her class, both owned and developed by Chas. Eldridge of Chimacum.

Aaggie Nena Cornucopia, a junior two-year-old, has produced in seven days 681.1 pounds of milk, her highest single days production being 100.8 pounds. This places her at the head of her class for milk production. Her best butter record for seven days is 240.61 pounds. She is being officially tested for thirty days and the first twenty days of her test indicate that she will produce 2700 pounds of milk and 93 pounds of butter. She was sired by Aaggie Cornucopia Newman, now owned by the Canadian Government, and she carries 50 per cent. of

## Holsteins of Pontiac and Hengerveld Dekol Breeding



Our advanced Registry list has been proven more efficient and greater in numbers of high record cows than we had anticipated. As a number of young registered cows are coming fresh we spare a few more which would make valuable foundation stock for other herds.

We also have a fine crop of calves and some Registered bulls. These bulls and youngsters are all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

Naturally the demand increases for dairy cattle during the abundant pasturage season and now is a good time to get started right, while the butter market is becoming quite satisfactory.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

the blood of Margie Newman, who holds the world's record for milk production in one day.

Margie Juanita, a junior three, has produced in seven days 639.3 pounds of milk and 28.30 pounds of butter and in thirty days 2805.4 pounds of milk and 117.115 pounds of butter. This places her second in her class for milk production and fifth for butter production. This heifer carries 25 per cent. of the blood of Margie Newman.

As soon as these tests are completed they will be sent to Prof. A. B. Nystrom, and then sent to Supt. M. H. Gardner, making them authentic. — Very truly yours, A. Leland Beam. (Supervisor in charge of test.)

### AMERICAN GUERNSEY CATTLE CLUB.

At their recent meeting the following officers were elected:

President, James Logan Fisher, Philadelphia, Pa.; Vice-pres., Hon. W. D. Hoard, Ft. Atkinson, Wis., and E. R. Andrews, Putney, Vt.; Secy. and Treas., Wm. H. Caldwell, Peterboro, N. H.

Members of Executive Committee for ensuing 4 years:

F. G. Benham, Canandaigua, N. Y., W. W. Marsh, Waterloo, Iowa.

### PASTEURIZING MILK.

In order to kill all disease-producing bacteria in milk a temperature of 145 degrees F. should be secured and kept for half an hour. This is not always done. Sometimes, the same results are expected by heating to a higher degree for a shorter time. This process, however, is not advisable. What are called flash or instantaneous pasteurizers are sometimes used. The results from this class of machines are always unreliable. Furthermore, milks are sometimes properly pasteurized but afterwards subjected to the danger of infection by careless handling, by hand bottling, by infected caps, or by unsterilized bottles.

Pasteurization should be encouraged, but carefully controlled. This is not an easy matter but recently devised methods give promise that this can soon be easily and quickly done.

Pasteurization should never be allowed for the purpose of "fixing up" or making salable a poor or dirty milk. But milk from tuberculin test-

ed, healthy, clean cows, gathered and handled in clean surroundings and properly pasteurized is the safest milk that has yet been produced.

### OAT-VETCH-CORN SILAGE EXPERIMENT.

Dr. A. P. Stockwell, of Monroe, states to the Horticulturist and Dairyman that their King Segis bull, purchased in California at a long price last year as a calf, is developing in fine shape. In their pure-bred herd are now some fine youngsters which are likely to become a good source of supply for some of the local dairymen. Great crops of grass, oats and vetch, also corn are grown on their fertile farm near Monroe. The Doctor has conceived the idea of an experiment with a oat-vetch-corn ensilage. A fall crop of vetch and oats is timed to mature at the time corn should be cut this fall and these crops will then be put into the silo, first a load of corn, then one of the oat-vetch crop. The idea is to make a more perfectly balanced silage ration than is afforded by either crop alone. The experiment will be watched with much interest.



**20% MORE MILK**

From your cows — more work from your horses — if you use this one spray which lives up to its name. Works at once insures Safety, Comfort, Results. Pays for itself in the feed it saves.

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**PORTLAND SEED CO.**  
PORTLAND, OREGON

Ask for Free Circular No. 51

**\$1.25 Per Gallon**

### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

**GEO. A. GUE**  
North Yakima, Wash.

## PERFECTION MILKING MACHINES

The Nearest Approach to Hand Milking

## RELIABLE, SAFE DURABLE

Write for Catalog

**The J. C. Robinson Co.**

46 FIRST STREET  
PORTLAND, OREGON

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

**POLAND CHINA PIGS**

Write for prices.

**E. L. Lloyd**

Box 466 Monroe, Wash.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT** Dungeness, Wash.

**FOR SALE**—Pedigreed O. I. C. Hogs \$15 each. Wild and Bronze Turkeys, eggs 25c and 35c. Pure bred White Leghorns eggs 15 for \$1.00, 100 for \$4.50. E. Y. SANDERS, Roy, Wash.



# STOCK

## FARMERS' PACKING HOUSES.

### Federal Meat Inspection, Local Shipping Organizations.

Farmers' cooperative meat packing companies recently have been organized in a number of communities in Wisconsin, Iowa, and Minnesota, and more than a score of others are reported to be contemplated. Such marked interest in the possibilities of cooperation in the packing business is being manifested in various sections of the country that the Department of Agriculture is making a study of the movement to determine what conditions are essential to the success of this plan of cooperation and to give rational counsel in the matter wherever help is requested.

One of the requisites for interstate shipment of meats from any plant, whether cooperative or privately owned, is Government inspection of the plant and of the animals and meats handled. Regulations of the United States Department of Agriculture provide that an authorized Federal inspector or inspectors be stationed at every plant engaged in interstate business. Before granting inspection privileges to a plant, however, the Government requires the plans and specifications of the plant, including sanitary arrangements, to conform to official standards. By communicating with the department regarding this matter and with officials of the State Agricultural College and Experiment Station or others who are in a position to give official aid, serious mistakes may be avoided by communities which are on the point of organizing such an enterprise. The importance of this point, is evident, in view of the fact that most of the companies recently organized, it is said, were promoted by persons from outside of the communities concerned. The Department of Agriculture is prepared to furnish advice relative to proposed plans, and welcomes inquiries regarding these matters wherever it can be of service to the farmers of any locality, or to officials of cities contemplating the establishment of municipal abattoirs.

(The first step towards successful Farmers Packing Houses is the simple requirements of an association for shipping stock together in car load lots to be sold at the large markets. Progress is being made in that particular in each of several localities in the Pacific Northwest.—Ed.)

### SELF FEEDERS FOR HOGS.

Self-feeders can be so built as to feed from one or both sides, and to hold and amount desired. If made too large, they are hard to move, if they are to be moved; and they also take up an undue amount of room. The minimum trough allowance per pig has never been arrived at, but six inches per pig has been found ample, only a small part of the herd eating at one time.

In six trials, the Agricultural College and Eastern Oregon Experiment Stations, testing the self-feeder against hand feeding the same ration twice daily, and employing all the leading feeds of Oregon, found the average daily feed per head consumed from the self-feeder was 6.783 pounds; from hand feeding 6.244. The aver-

age daily gain per head with the self-feeder was 1.676 pounds, and with hand feeding 1.401 pounds. The feed per 100 pounds gain required by the self-feeder lots was 404.768 pounds and with the hand fed lots 433.586 pounds. A saving of 0.7 per cent of feed was effected by the use of the self-feeder. The labor factor is also materially decreased. The self-feeder may unquestionably be used with profit to a much greater extent than is generally done.

### THE HOG PROSPECT.

Compared with cost of cattle and sheep, hogs are not high and bullish prediction is warranted. Owing to the general adoption of the serum method of prevention of hog cholera pork production in the United States has expanded enormously of late. Receipts at the eleven principal markets during the first half of the current year were approximately 14,300,000, against 12,100,000 last year. That the high hog market of recent years is to be maintained under new production conditions is doubtful, although per capita consumption of pork in its various marketable forms has allowed maximum volume in the United States. Export trade has been thrown off its stride by the European war, which has curtailed foreign demand for lard and repressed consumption of rough meats in the South, but scarcity of lamb and mutton together with high cost of beef has impelled domestic consumers to use more fresh pork and bacon. The restraining influence of an avalanche of hogs was effective in the cattle market all last winter and packers are committed to the policy of filling their cellars with product at minimum cost during the winter period of abundance. Fresh pork is popular with the public during low temperatures and cattle feeders will do well to take this competition into their reckoning. Cheap hogs have not exerted a seriously adverse influence on live mutton values because sheep and lambs have been so abnormally scarce that confirmed users of the product bought it regardless of cost. Had the run of sheep and lambs during the first half of the current year been 20 per cent. heavier that trade would probably not have been in better condition than the cattle market. —Live Stock World.

### THE OX WARBLE FLY.

Cattle grubs, when infestation is heavy, seriously affect the gains in fattening cattle and reduce the flow of milk in dairy cattle, states Professor William Hislop. Animal Husbandman of the Washington Experiment station at Pullman.

A case is recorded by Boas, in Denmark, of an infested dairy cow which, while she remained in poor condition, gave 33 pounds of milk per day. Forty-six grubs were extracted from her back, and eight days later she was giving 44 pounds of milk per day. The loss in this case was 25 per cent. The hides of grub infested cattle are so perforated with holes that they are discriminated against when marketed. A green, "grubby" hide is generally worth one cent a pound less than a



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

### SKYKOMISH VALLEY HERD

#### HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

### Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

### Electric Light Farm

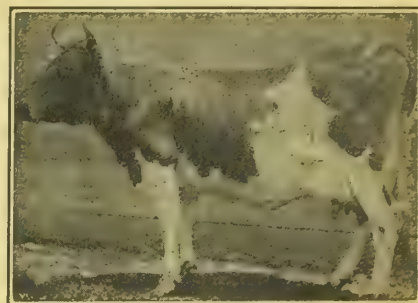
#### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculine tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

### FISHERBROOK FARM

Box 34, Milltown, Wash.

## BLACK LEG

### LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.

### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

### MOUNTAIN VIEW FARM

Mt. Vernon, Wash.  
Otto Rundgren, Prop.

### Register of Merit Jerseys

Young bulls for sale from cows with authenticated yearly records; no females for sale at present.

**DAVID C. DILWORTH**  
Buckeye, Wash.

### GUERNSEY BULLS

A very fine 2-year-old Guernsey sire is offered for sale. He is sired by Melba's May Prince, out of Imported Chartrouse, with advanced registry test of 10,238 lbs. milk and 525 lbs. butter in one year. This is a rare opportunity to get a young Guernsey bull of this class. The price is reasonable considering ancestral records and the excellent quality of the animal. Write for particulars. **AUGUSTINE & KYER**, First St., Seattle, Wash.



**SHEEP AND DOGS.**

Many farmers in the Coast section of the Pacific Northwest could raise a small flock of sheep profitably. Mutton prices are going up and likely to continue very firm for some time. Sheep are good weeders, mature early, afford meat for the home and some handy pocket money at frequent intervals. A great menace to the sheep industry is dogs. The U. S. Agricultural Department estimates that the loss to sheep owners from dogs averages 1 per cent., which is too great a tax on an industry which should average about 6 per cent net profit. The remedy is to impose a tax on dogs, thus reducing the number of surplus curs. Another prevention is to provide wire fences around the field to be pastured, with a suitable amount of portable fencing for partitioning and confinement, according to the crops grown and season of the year. In Great Britain there is 1 sheep or lamb for each 2.5 acres of the total area. In the 36 farm States in this country there is 1 sheep or lamb for each 31.8 acres. The British farmer handles his land on an intensive basis and feeds his sheep on forage-crop pastures. Such pastures not only increase the fertility of the land but also free the sheep from many internal parasites contracted through grazing upon permanent pastures. In particular the use of a succession of forage-crop pastures will prevent stomach worms, one of the most prevalent and disastrous scourges of young stock, and will enable the farmer to market by the end of June or the first of July, when market prices are usually the highest, the lambs that were born in the late winter or early spring. Handled under such conditions and on high-priced farm land the importance of a small flock of sheep cannot be overlooked.



You'd think it ridiculous to deliberately throw away a good set of harness. Yet when you fail to keep your harness oiled you actually throw away years of its usefulness.

**EUREKA HARNESS OIL**

Leather is very porous. And unless you keep your harness oiled, sweat, moisture, dust and heat rot the fibre and thus shorten its term of service. Eureka Harness Oil preserves the original life, strength and elasticity of tugs, straps, and breechings—adds years to their life. Get your harness dealer to dip your harness occasionally or apply it yourself by hand. Dealers everywhere.

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**BERKSHIRE PIGS**  
Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.  
**ALBERT C. HERRE**  
Route 1      Everson, Wash.

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. **GEO. W. HAY-TON**, Mt. Vernon, Wash. R. 3, Box 73.

Buy a **HAMPSHIRE** if you want a **HOG**  
In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.  
**HIGHLAND FARM,**  
Box 56      Underwood, Wash.

**REGISTERED BERKSHIRE BOAR** — For service and care of cow one week, \$5.00. **R. H. KELCYNski**, Sylvan, Wash.

**AT STUD**—Pure bred Swiss Toggenburg buck, King Solomon No. 258 A. M. G. R. A. Write for service fee. **M. P. EGGERS**, R. D. 3, Tacoma, Wash.

**O.I.C. Hogs** Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices.  
**A. L. PIERCE,**      Granger, Wash.

**REGISTERED POLAND CHINA**  
Some splendid pigs with good pedigree, \$12 each, either sex; crated, F. O. B. and registered. Satisfaction guaranteed.  
**ROY MINTER**  
Castle Rock, Wash.

**Red Polled Cattle For Sale**

A few choice young registered bulls and heifers. Best breeding. Write for prices.

**MRS. D. F. ALWARD,**  
Orting, Wash.



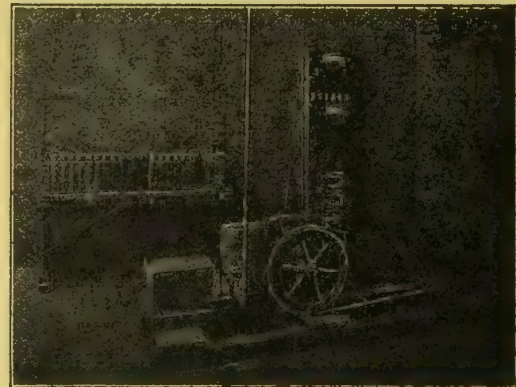
**THE TRAP NESTED WHITE LEGHORNS**  
10 WEEKS OLD, APR. HATCHED

**PULLETS**

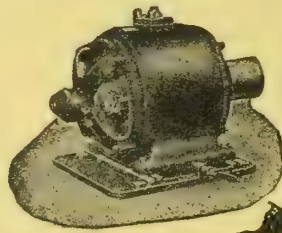
Sure Winter Layers. Only a Few Hundred Left  
**THE TANCRED FARMS**  
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**GAS and ELECTRIC POWER ON THE FARMS**



**BATTERY "Exide" SERVICE**



Complete electric light plants, starting and ignition for autos and trucks. The Reliable Atlas Gas Company are unexcelled for any rural power requirement.

Our engineers are thoroughly skilled and will cheerfully advise, estimating material and cost of any individual plant. Please write regarding particulars for which installation is desired. Satisfaction guaranteed. Prices reasonable. Send your name to receive a copy of our new catalog now being made ready.

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SEATTLE WASH.

**Registered Jerseys**

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

**A. G. WOODWARD**  
Route 1, Box 12      Fairbanks, Wash.

**BERKSHIRE SWINE**

Choice registered weaning pigs at \$10 to \$15, satisfaction guaranteed or stock returnable.

**HOMER NELSON,**  
Box 288, Marysville, Washington.

**For Sale Duroc Hogs**

Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.

**H. A. SIMONDS**  
Bothell, Wash.

**"B. K. M. BERKSHIRES"**

Bred Gilts, Sows and Boars for sale  
Good pigs \$10.00 to \$15.00 each.

**WOODLAND FARM**

Lacey, Thurston Co., Washington

**FOR SALE Guernsey Bulls**

Strongly bred from highly testing ancestors. Write for Particulars

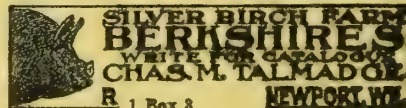
**Plateau Farm**

**VASHON, WASH.**  
**S. M. SHIPLEY, Proprietor,**  
Haller Bldg., Seattle.

**MERIDIAN DAIRY FARM**

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1      Lynden, Wash.

**BOOK ON DOG DISEASES**

And How to Feed

Mailed free to any address by the Author

**H. CLAY GLOVER, V. S.**  
118 West 31st Street, New York

**Rocks**

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

**MRS. D. F. ALWARD**  
Orting, Wash.

**Registered Jerseys**

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

**CREAM AND EGGS**

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,**  
Seattle, Wash.

Please Mention Horticulturist & Dairyman



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### COST OF FATTENING POULTRY

The average cost and the amount of feed consumed in fattening 394,744 chickens in four experiments during the season of 1911 were, respectively, as follows: Grain per pound of gain, 3.62, 3.33, 4.45, and 4.18 pounds; cost of feed per pound of gain, 7.83, 7.20, 7.15, and 8.71 cents; total cost per pound of gain, 9.18, 9.20, 8.96, and 10.27 cents. In 1912 it was slightly higher.

### P. P. I. EGG LAYING CONTEST.

The sixth report of the world egg-laying contest at the Panama-Pacific Exposition shows that the O. A. C. Leghorns led with 208 eggs and the crosses were second with 188. The Barred Rock dropped back one place in the race.

For the term record at this, the middle point of the race, the Canada pen of Adams' White Wyandottes is still in the lead with 773 eggs, while the O. A. C. Leghorns are in second place and have all but overhauled their splendid competitors. Last month the Leghorns were 47 eggs behind their rivals, this month they are but five behind. The O. A. C. crosses are third with 712 eggs, having advanced from fifth place last month. The O. A. C. Barred Rock are now fifth in the term records with 694.

There are 60 pens in the contest. The lowest record is 127 eggs for the six months, made by a San Francisco flock. The O. A. C. Leghorns and crosses are now ahead of any other pens from the United States or England.

The encouraging thing about the O. A. C. flock is that the three pens stand close together right near the top. They were bred by the same selective method and results show beyond question that the breeding has been good.

The highest individual record is that of the New York Leghorn with 111 eggs for the six months. Two O. A. C. crosses are tied for second with 107 eggs each. The third highest is an O. A. C. Leghorn with 105 eggs, and another Oregon Leghorn is sixth with 95 eggs.

### LOCAL COLD STORAGE PLANT.

Capt. A. Waldwick has installed one of the Armstrong Cold Storage plants for storing about 600 cases (18,000 dozen) eggs. The machinery consisting of gas engine pipes and charge tanks complete was about \$650. This expense is more than likely to be made up the first season. Small plants of this kind installed by cooperative concerns composed of dairymen and poultry raisers would enable the producers to market when prices suit.

### POULTRY MARKET PROSPECTS.

Editor Horticulturist — Prospects appear to be very bright for the best year in the poultry business since 1911. I mean the year beginning with the coming harvest time, for beyond a doubt we may count on cheaper wheat than we have had for several years past. The whole world

has sought to raise wheat and the coming harvest will be the largest in history.

Egg prices are bound to be better than last season. There never was such a shortage of pullets as at the present time; eggs will be "eggs" next winter and with cheap feed and better egg prices we may look for good times again in poultry raising.

I am so certain of this that I am raising more pullets for my own use than ever before and enlarging the scope of my breeding operations in anticipation of a tremendous increase in the demand for stock.

D. TANCREL.

### THE LAYING AGE OF LEGHORNS.

The experiment station at Logan, Utah, has been working on the profitable age problem of Leghorn hens and concludes that the average productive life of this breed, for laying, is 4 years. The average of the first and the second year they found the same, the third year about 8 per cent. less. The average for the flock under test for three years was 127 eggs per year. The fourth year the average was only 90 eggs per year.

### CROPPING AND FEEDING PLANS.

Mr. L. L. Westergaard, near Edgewood, on the Tacoma-Seattle Interurban, has 1000 Leghorn hens which afford him a good profit margin. About 20 per cent. of the grain fed is oats. His method is to spread it out over a cement floor about 10 to 12 inches deep, sprinkle with water and after a few days when the grain begins to heat, spread out thinner and pour on more water. When the oats begin to sprout keep stirring at intervals to prevent caking, then feed as required. Barley may be used instead of the oats, but it heats more quickly and unless closely watched may be spoiled. Mr. Westergaard raises quantities of Sludstrup mangels and kale, reducing the amount of wheat to be purchased as much as possible.

### GOOD POLAND CHINAS.

C. B. Cox, manager Mabton Valley Fruit Company, Mabton, Wash., writes that their young Poland China hogs are doing exceedingly well this season. They have about 100 head pure-bred, large type, "Meddler" strain on hand and are preparing to exhibit at the different shows during the fall.

### CREOSOTE MANUFACTURE INCREASING.

Owing to a falling off since August 1st of nearly 30 per cent. in shipments of creosote from England and Germany, whence comes all but a by wood preserving plants in this small part of the imported oil used country, American manufacturers have taken steps which, says a report compiled by the forest service, it is estimated will increase production of the domestic article by about 25 per cent. The imported oil ordinarily forms about 65 per cent. of the total used in the United States, where creosote is the most impor-

## THE SOUTHWEST WASHINGTON FAIR

Half way between Centralia and Chehalis.

Dates AUGUST 23 to 28, 1915

Every Department will be better than ever this year.  
Large new Poultry House, enlarged space for Commercial Exhibitors and best of accommodations for same.  
Good racing program in both Harness and Running events.  
Late events close August 7th. Running events over-night entries.  
Premium List, Running Program, Entry Blanks and Stake Book mailed on request.  
Our Half-Mile track is the fastest in the West.

For further information write or see

G. R. WALKER, Secretary,  
CHEHALIS, WASH.

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

## OREGON NURSERY CO.

ORENCO, OREGON

tant wood preservative.

The statistics gathered show that wood preserving is one of the most rapidly advancing industries in the country. In 1895 there were fifteen plants in the United States; in 1914 there were 122 plants of all kinds, 100 being of the pressure cylinder type. Ninety-four of these plants last year used more than 79 million gallons of creosote oil, more than 27 million pounds of dry zinc chloride, and nearly 2½ million gallons of other preservatives, such as coal tar and crude oil, treating a total of nearly 160 million cubic feet of timber, an increase of about 7 million cubic feet over 1913.

### THE PERFECTION MILKING MACHINE.

The Perfection Milking Machine made in Minneapolis, Minn., and put on sale in the Pacific Northwest by the J. C. Robinson Co., First St., Portland, Oregon, seems to be without many imperfections of former milking machines. It combines three actions, a gentle suction, a downward squeeze of the teat which is followed with a period of release to which the cows respond by "giving down" freely of their milk.

The cups consist of an exterior metal cylinder in spiral form with a reinforced India rubber lining which grasps the teat firmly up close to the udder when in use.

The rubber diaphragm or lining is held in position at the bottom of the teat cup by a round metal cup, which reinforcement permits an absolutely air tight joint at this point and prevents the annoyance and loss of time so commonly experienced, due to the breakage at this point, of the rubber linings in other milkers.

Vacuum exhausts the air in the teat cups below the teat and between the teatcup walls permitting the teat to fill with milk. Air pressure is then applied on the teat at its upper portion and it follows down the outer spiral metal surface of the teat cup, imitating very closely the way the fingers close one after another upon the teat in hand milking.

This air pressure continues until the entire contents of the teat have been emptied out, when the rubber inflation collapses below the teat, giving a perfect release from suction and permitting a natural flow of the blood through the teat.

This efficient machine is illustrated in a neatly printed circular sent free to any applicant who desires to get all the information possible about milking machines.

### PALACE HOTEL REDUCES RATES.

Since the Palace Hotel, San Francisco's historic hostelry, inaugurated its sweeping advertising and publicity campaign to acquaint the public with its reduced rates and at the same time to correct unjust and misleading statements regarding the hotel rates of this city during the Exposition year, ranchers, vineyardists, orchardists and dairymen are finding the Palace a convenient

## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds. \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

FRED A. JOHNSON  
518 35th St., Tacoma, Wash.

## EGG LAYERS

Our trapnested S. C. White Leghorns and Barred Rocks do the work. Day-old Chicks and Hatching Eggs. BLANCHARD POULTRY YARDS C. WESTERGAARD, Mgr. Hadlock, Wash.

## ANGORA GOATS

Registered heavy shearers, DUROC PIGS. Both sexes. Prices reasonable.

J. Hanks & Sons Ellensburg, Wash.

and popular gathering place. The reason for this is that when the Palace established its new rates and installed new features in connection with its service, the management had in mind meeting the particular needs of this class of patronage.

In making its reduction in rates the Palace Hotel has won the endorsement and praise of the Board of Directors of the Panama-Pacific International Exposition, the leading hotels of the country and also favorable editorial comment from many of the leading newspapers of the country.

### IMPORTANCE OF SILO INDUSTRY RECOGNIZED.

Big Lumber Manufacturer Announces Securing of Rights to Well Known Silo.

After considerable investigation which involved a trip over the country by Chas. K. Spaulding, this well known logging and lumber manufacturing concern has launched a Silo department. They have secured all rights to manufacturing of "Indiana Silos" in the Pacific Coast territory.

The "Indiana" is one of the pioneer Silos and it is claimed that over 50,000 "Indiana Silos" have been built during the last twelve years; 9,000 of them in 1914. This would make every sixth silo in the United States an "Indiana." The "Indiana" is built on the Harden patent with continuous door.

The Chas. K. Spaulding Logging Company has installed a modern Silo factory in connection with their big lumber plant at Salem, Oregon. The Spaulding Co. has for many years been one of the largest operators of logging and lumber manufacturing in the Northwest. The Silo department is under the management of Mr. Charles B. Smith, who is affecting a special organization of Silo experts which will place "Indiana Silos" within the reach of every farmer in the Northwest.



# EVINRUDE

## Detachable Rowboat and Canoe Motors

Clamp an Evinrude to the stern of any rowboat and you have a speedy motorboat. Think of it! This wonderful little marine motor enables you to instantly convert any kind of craft—rowboat, sailboat, houseboat or canoe—into a power boat. It drives a rowboat at the rate of 7 to 8 miles an hour—a canoe 10 to 12 miles an hour—and runs four hours on less than a gallon of gasoline.

So light that you can carry it with you anywhere. So strong that it is practically unbreakable. So simple that women and children have no difficulty in operating it the first time they try.

It starts by giving the flywheel a quarter turn and is stopped by pressing a push-button. Make up your mind now to take an Evinrude with you on your vacation this summer—and enjoy yourself as never before.

The 1915 model has Maxim Silencer; Automatic Reverse, enabling you to “back water” instantly; and Waterproof Magneto built into the flywheel—no separate battery required.

Send today for free illustrated catalog and name of Evinrude dealer in your town.

### EVINRUDE MOTOR CO.

167 Evinrude Block  
Milwaukee, Wis., U.S.A.

#### Distributing Branches

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Portland, Ore.

Chandler Dunlap Co.  
73 Columbia St.  
Seattle Wash.





# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., AUGUST, 1915

No. 8

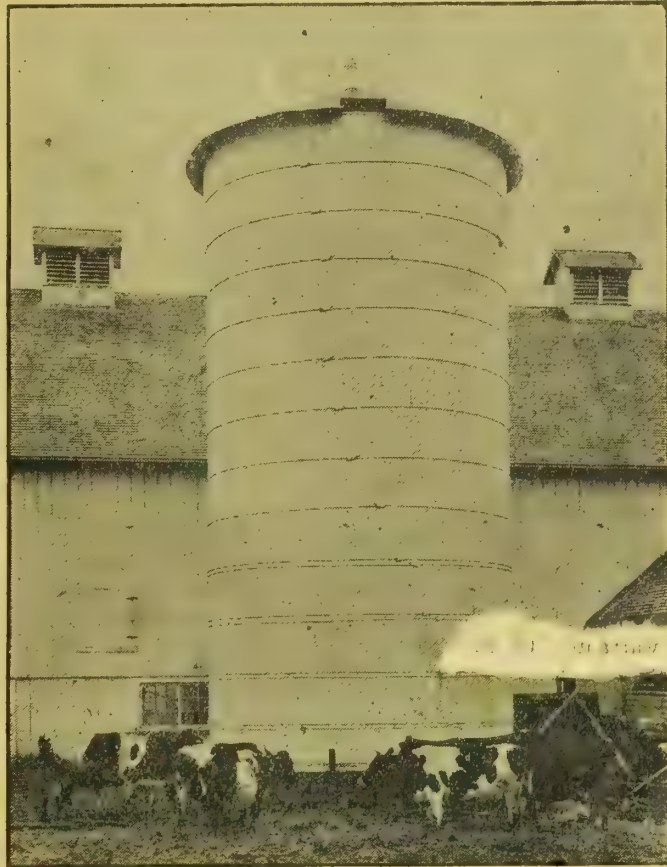
## Business Depression and Education.

Business depression has become general, the wheels of commerce world-wide, having been slowed down a condition exists which sooner or later must necessarily change. In the United States transformation is taking place through the process of government regulation. Government machinery deals with banks, trusts, transportation, foods and many individual business affairs until those engaged in business undertakings wonder what is coming next.

In a recent address the Honorable Elihu Root pointed out the fact that at the present time the conduct of the government is too largely by men who have but little concern with the business of the country, men who distrust the man of business.

Measures have been framed up and enacted into law under influences which have rejected the voice and counsel of those whom they most immediately affect. The railroad man's testimony of what legislation there should be affecting railroads has been rejected because he was a party in interest. The bankers testimony about finance has been rejected for the same reason and the manufacturers testimony about manufacturing is thrown out because he was a party in interest. The merchant's and the ship owner's testimony is not considered for the same reason.

In other words knowledge of the business affairs of the country has disqualified men from taking any part in the conduct of the increasing participation of the government in the control of business affairs. This has not been accidental nor are individuals or parties responsible, but it has been a development of the feeling of the whole country. The men concerned in agriculture, in the main, have come to suspect and misunderstand the men concerned in business in the main. How and why wealth is becoming centered is not definitely understood. Life is so complicated now, the affairs of this great country are so involved that there is very little real understanding by one community of the affairs of another. Through a lack of knowledge and misunderstanding there has come about a feeling of adverse interest instead of common interest that which is necessary to keep continually righting the wrongs. Those in charge of governmental affairs can continue with the present policy only so long as the people permit, and the only possible excuse for the people to continue under present condi-



The silo has become a fixture with leading dairymen throughout the northwest. A demonstrated success where properly built

tion of affairs is because of a lack of education.

Mr. Root appeals to the business men of the country to start educational campaigns giving the people correct information about the conduct of business affairs.

We need missionaries of good understanding, a willingness to get facts before the people which will enable them to make choices that will work

out for the common interests of all the people. The representatives in government affairs must be permitted to receive testimony of those experienced in the various lines of endeavor, carefully weigh it and decide the course of action.

As a body the farmers can be foremost in power and action for reform if they will unite for the purpose of receiving instruction and to set at

the work of making straight the paths which have become crooked.

## SERVICE AND COMPENSATION.

Many people in the cities of the United States are seeking opportunity for service at the present time. As a rule farmers are not confronted with that problem, but theirs is a question of adequate reward for labor. Working single handed and acting independently, the farmer has much less to say about dividends, which naturally accrues from our many great inventions and from the combined efforts of all wealth creating powers in which he naturally is included.

At the recent state meeting of the Grange, Master Kegly stated that organization was demanding adequate marketing and rural credit systems. These are both available to the farmer as soon as he joins with others in sufficiently large numbers to make his demands impressive, first definitely formulating the measures which will work out satisfactorily to himself and others. The first essential step for the American farmer to take is towards his neighbor farmers and while it is now being taken he would benefit by hurrying a little faster. At the present time there should be scores of associations for every one in existence, each for a definite purpose. For instance the shipping of fruits and produce, for the buying of live stock, the purchase of machinery such as may serve for two or more. Among which might be mentioned stump pullers, threshing machines, etc. It necessarily takes time to harmonize those holding divergent views but through association and cooperation among farmers themselves is the only way to harness their scattered power, and when the farmers throughout the country act in unison they will have more to say about a fair and just compensation for the service which they as husbandmen perform.

## THE RED RASPBERRY CROP.

The red raspberry crop in the Puyallup Valley was the largest in the history of the industry. The Association shipped 382 cars representing perhaps over 75 per cent. of the entire valley crop. The juice industry is making progress slowly. Some of the berries in cold storage can be worked up into shrubs during the fall and winter season.

The manufacture of juices and the development of markets for them requires careful work and considerable time. The building of markets for any particular line is a gradual process.



There are many beautiful driveways throughout the country.







fruit annually, or about 65 per cent. of the citrus-fruit crop of California, and is able to secure the necessary credit, the bankers of California realizing that the cooperative movement is the foundation stone on which the \$200,000,000 invested in the citrus industry rests. In other words, this is a rural credit system of the soundest type, the federated moral security of 7,000 growers and a history of careful management being its only collateral."

The California Fruit Exchange, the cooperative marketing organization for deciduous fruit growers shipping fresh fruit, finances itself and its individual growers from a reserve fund built up by setting aside 15 per cent. of its net earnings annually for this purpose.

The Puyallup and Sumner Fruit Growers' Association is based on a like correct form of cooperation. The first year there were only 17 active members and for several years the membership increased slowly. Based on correct principles a cooperative association cannot fail to grow both in numbers and in power.

#### BARRELS PROPOSED FOR LOW GRADES.

The Western Cooperaage Company, of Portland, Ore., are preparing to make prices to fruit growers on government standard apple barrels. The proposed barrel would require no special labor or tool to make up. The purpose is to offer a package for the second and lower grades, which require a cheaper package than boxes.

#### CONTROLLING APPLE BORERS.

"Worming" and painting the trunks of the trees are recommended to owners of apple orchards as efficient methods of dealing with the round-headed apple-tree borer in a new Farmers' Bulletin, No. 675, of the U. S. Department of Agriculture. A heavy application of some paint that will not injure the trees but will remain in an unbroken coat on the bark for two or three months, is effective in preventing the female from laying her eggs in the tree, and greatly reduces the amount of worming, or the removal of the insects with a knife and wire, that must be done.

The roundheaded apple-tree borer, the most destructive of a number of similar pests, lays its eggs in or under the bark of apple trees. After hatching, the larvae feed upon the inner bark and wood to such an extent that the tree is seriously weakened or killed.

#### FRUIT JUICES FOR THE HOME

That the juice of currants, blackberries, black raspberries, sour cher-

ries and peaches may be prepared and kept as successfully as grape juice and by the same methods, has now been demonstrated in the course of a series of investigations which the United State Department of Agriculture is conducting into the whole complicated question of fruit juices. The juices of the fruits mentioned, it has been found, retain their characteristic color and flavor after being sterilized and stored away and can, therefore, be made available for use throughout the year in households and at soda fountains, etc. In this way it is thought much fruit that has hitherto been allowed to go to waste may be utilized.

For reasons, however, which are not as yet very thoroughly understood, the various fruits differ greatly in the effects of sterilization upon them. Thus, strawberry juice and red raspberry juice lose their distinctive colors and flavors very readily and, therefore, as yet can not be put up on a commercial scale and marketed as grape juice is. Lemon and orange juices also undergo peculiar changes in flavor after sterilization and no satisfactory method of overcoming this obstacle has yet been developed. Lemon juice is the more promising, but this, too, can not yet be manufactured commercially with success. With certain precautions, on the other hand, pineapples can be made to yield a sterilized juice of a very attractive flavor which should have distinct commercial possibilities. The juice, however, should be kept in cold storage at from 32 to 35 degrees Fahrenheit after sterilization, and most of the suspended material should be removed by means of a milk separator or by filtration. Moreover, where atmospheric oxygen is not excluded in the process of bottling, the juice darkens gradually. (Raspberry juice is best put up in the form of a shrub and there is no doubt a great opportunity for a commercial product in this form.

These studies have already resulted in the discovery of a method producing concentrated apple juice by freezing which is not only easier to ship than ordinary cider, but which will keep much better. In the concentrated juice, however, the presence of sugar and acid retards the growth of micro-organisms and fermentation is very slow.

Details of the experiments with a discussion of the effects upon the various fruits of sterilization, exposure to atmospheric oxygen after sterilization, storage at low temperatures, etc., are contained in a new bulletin of the United States Department of Agriculture, No. 241, Studies on Fruit Juices.

## VALUABLE DAIRY AND FRUIT FARM FOR SALE

One of the very best and most productive combined dairy and fruit farms in Central Washington has been placed in our hands for sale. The location is very close to Ellensburg, a district which has become famous for the high quality and volume of cream and butter produced. It is in the apple belt corresponding to Hood River on the south and Wenatchee on the north, near the eastern foothills of the Cascade range, where the fancy grades of apples are grown and packed, and where the expense of controlling injurious insects is very light.

Shipping facilities are good both over the Northern Pacific and the Milwaukee railways. The farm embraces 80 acres of valley land, thoroughly irrigated, water being supplied by two ditches.

It is well improved and equipped, in complete order for immediate revenue. Included are 16 high grade and pure bred Jerseys, 125 Poland China hogs, 5 horses, some sheep and chickens.

There are 33 acres of apple orchard, with trees in good bearing condition, from 8 to 15 years old and of splendid commercial varieties, besides ample fruit of other classes for domestic use. Other crops growing this year include, 10 acres wheat, 6 acres oats, 5 acres corn, 18 acres pasture and 14 acres meadow, besides a variety of vegetables.

The buildings consist of a comfortable dwelling, 2 bunk houses, a horse barn, cow barn, ice house, sheds for machinery, silo, tower, pump house, separator room, fruit storing and packing house, besides poultry, hog house and other out buildings. The farm is well fenced and buildings and fence in good repair.

The net revenue, above expenses, from this farm for the past three years has averaged over \$5100 a year. The farm is so well planned and cropped that income is sure and constant. With the place goes this years' crops, all live stock and full equipment of farm machinery. It is rare to find a place so well improved for sale and any reader who is in the market for a valuable farm or have any friend wanting to buy will do well to investigate. Correspond or call.

**Malcom E. Gunston Co. Agts.**

**505 Berlin Bldg.**

**Tacoma, Washington**



**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
*C.F. Lansing, Prop. Salem Ore.*

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

**QUAKER NURSERIES**

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

**Does He Earn What He Gets?  
 Does He Get What He Earns?**

#### THE SPECULATOR.

**Does He Earn What He Gets.**

Does the speculator earn all he gets? If he gets more than he earns then some one, probably a farmer, gets less than he earns.

Some years ago only one acre in ten of the good agricultural land of

Whatcom county was "cleared." Land is often said to be "cleared" but not "stumped" in which case "clearing" means simply slashing, burning and cleaning up of rubbish, the big stumps all left! Even with that loose meaning only one acre in ten "cleared."

In the cities only about one lot in seven or one in ten is in use.

**16th Annual  
 Western Washington Fair  
 Puyallup**

**Tuesday, Wednesday, Thursday, Friday,  
 Saturday & Sunday.**

**Sept. 28-29-30 Oct. 1-2-3 1915**

**The Fair That Makes Good**

**W. H. Paulhams, President**

**J. P. Nevins, Seceatary**



Four-fifths to nine-tenths of the valuable land of the state in the hands of speculators. Idle land makes idle men.

The pioneers had to go to the wilderness, because speculators held all the land near the city.

#### What Does a Speculator Earn?

A speculator buys up land, not for use, but merely to get the rise in price that comes when we farmers clear adjoining land and show what can be done with it; when we bring our friends to Washington the speculator picks their pockets (or more mildly—takes the cream.)

When I came here, sixteen years ago, there was only a trail winding around among trees, impassable in the winter; barely passable in the summer.

Land was worth nothing at all. Places with \$5,000 in improvements could be bought for \$2,000 to \$3,000. Pay 25 cents a cord for the shinglebolts and the land would be thrown in.

Today the wild land is worth \$125 per acre, \$80,000 per section.

Who "earned" this \$80,000 per section?

**PEOPLE WHO WORK.** Farmers who cleared up nearby lands. Wage workers in the cities who need more food. Our friends from the East.

The speculator has done nothing at all.

He may live in London or Boston. Whether foreigner or native born is quite immaterial to us.

#### Ground Values More Fluid Than Irrigation Water.

One man may irrigate his field while an adjoining field is as dry as before. Sometimes there will be seepage, and a speculator, below the ditch will be benefitted without earning or paying for the water.

But here on the West Coast the farmer who clears up his land GETS LESS THAN HALF OF THE VALUE HE EARNS.

Let a dozen families go far back from roads and start a settlement. Land may be only \$5 or \$10 an acre.

At first there will be no school. There will be no church. It will be

miles, over almost impassable trails, to a blacksmith shop; or a store.

After years of ceaseless toil and great privation they build a road out of the wilderness. Other settlers come. A village grows up. Finally a railroad comes to connect them with the great outside world.

Wild land will now be held at \$75 per acre.

Did the speculator earn it?

Did the pioneer get it?

The same is true in the city. On Second Avenue, Seattle, some lots sell at the rate (bare lots, with no buildings at all) at \$2,000,000 and \$3,000,000 per acre.

We, you and I, sold this land years ago, for \$2.50 per acre.

WE have made all its value; farmers, wageworkers, merchants, teachers, mothers who work at home, nurses, all of us who SERVE OUR FELLOWS, we have created all these millions.

We earned it!

The speculator got it!

"How?"

That is a simple story; but I won't tell it till next month.

Yesterday I began feeding peas to a hundred shotes. Just a little at first till they get used to the new feed.

Speculators (some foreign, some native), speculators are getting over \$4,000,000,000 a year from the workers of the United States.

The more they get the more they have with which to try to corrupt our legislatures and courts and newspapers and churches.

Do you want to know how they get your \$200 to \$250 a year?

Do you want to know how to get it back? And how to keep them from getting any more than you have earned?

Next month I will tell how they get it.

In the October issue of the Horticulturist I will show how we may protect ourselves.

"Does He Earn All He Gets?"

"Does He Get All He Earns?"

—W. H. KAUFMAN,  
Bellingham.

## AGRICULTURE

## The Basis of Prosperity

### SILAGE CORN AT ENUMCLAW

Mr. Ira Pearsall, of Enumclaw, has been raising corn on his farm at that place for the past ten years, giving special attention to early selection and planting for cross pollination until he has a corn which will mature early and produce over 75 bushels per acre. The silage crop yields about 18 tons per acre and is a great success. When the silo became a fixture with dairymen a few years ago, he was solicited for seed and gradually his place became a source of supply until last spring, when two tons seed was sold at a profitable price. This year's crop is in splendid condition, besides being sufficient for his silos the estimate for seed purposes is about 900 bushels. The variety most largely grown is that known as "Bloody Butcher," cherry red in color. A yellow and a white dent is also being grown and acclimated.

Experiments as to time of planting

leads Mr. Pearsall to believe that under like conditions as at Enumclaw, planting should be done between April 1 and 15, because the crop can then be developed before the dry spell of late July and August.

Corn was planted in March this year and while frosted twice was not badly injured. When planted the last part of May or early June it will mature sufficiently for ensilage if properly cultivated on well prepared land.

Mr. Pearsall has a pure bred Holstein herd of King Segis, Korndyke and Ormsby breeding, and with the silo and abundance of clover, grows practically all the feed required. He is of the opinion that within the next five years the Coast Section will raise about all the grain feed dairymen here require in the form of corn silage which with clover, vetch, peas, and some oats or barley, makes a well balanced milk ration. Corn silage at Enumclaw is a decided success.



# Fall Sowing

OUR TESTED GRADES OF  
**VETCH-CLOVER-GRASS**  
SEED AND COVER CROPS

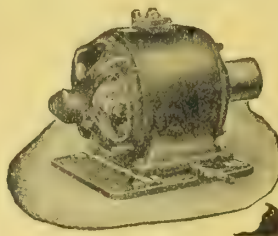
have had much to do with the Agricultural Development of the Pacific Northwest. We furnish all Seed tested for Purity and Germination. They are Grown, Cleaned and Packed under our supervision and tested by experts. Sold by dealers in Lilly trade-marked sacks. Send for price list.

## Lilly's Tested Seeds

## NILSEN & HANNA are supplying GAS and ELECTRIC POWER ON THE FARMS



BATTERY  
**"Exide"**  
SERVICE



Electric lighting and power, generated either by a gas engine or an electric motor, may now be seen on numerous farms in the northwest. While the first cost may be more or less than anticipated, the service when properly installed, affords such measures of satisfaction that owners regard their investments well made.

By turning a button or switch the house or barn is lighted. Start the engine or motor and do the pumping, churning, washing, feed cutting or wood sawing. It is important that the machinery is correctly placed, that it is strong and reliable, and that the installation is made for dependable service.

Our engineers are thoroughly skilled and will cheerfully advise, estimating material and cost of any individual plant. Please write regarding particulars for which installation is desired. Satisfaction guaranteed. Prices reasonable. Send your name to receive a copy of our new catalog now being made ready.

## ATLAS GAS ENGINE Agency

901 WESTERN AVENUE

SEATTLE WASH.

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

**OREGON NURSERY CO.**  
ORENCO, OREGON



## CO-OPERATIVE MARKETING

### PROSPERITY AND HAPPINESS THROUGH AGRICULTURAL CO-OPERATION.

Suggestions by Messrs. Bassett, Moor and Keer, Specialists in the Office of Markets and Rural Organization in the U. S. Department of Agriculture.

A new faith has developed on the part of the farmers themselves that the cooperative plan of doing farm business is the most satisfactory method. Like the European farmer, the American farmer is being driven to cooperation by necessity. In the United States the necessity arises chiefly from the costly, clumsy, and unbusinesslike methods of distributing food products, resulting in an abnormal discrepancy between the price paid to the producer and the cost to the consumer.

American farmers are beginning to realize by selling cooperatively they not only will be able to offer a standardized product and reduce the cost of marketing, but they will be able to furnish this better article to the consumer at the same or even lower price, thus stimulating consumption. In fact, any system of marketing that does not hope to give better service or better prices to the consumer, and, at the same time, secure for the producer a greater net return, is founded on improper principles.

#### Full Shoulder to the Wheel

Farmers must be willing to furnish their products, invest their share of the necessary capital, and at all times give their enthusiasm and most loyal support to the cooperative enterprise undertaken. Frequently a member offers to "let" the association handle a part of his products, forgetting that the favor is to himself rather than to the organization and that the part of his crops which he holds back furnishes the most difficult competition for the cooperative effort to face. The person who lacks sufficient faith in the cooperative plan to "go in all over" will prove an element of weakness rather than of strength.

Farming communities cooperate to secure better churches, better local government, and better schools. If they are willing to leave their religion, their politics, and the education of their children to cooperation, why should they hesitate to leave the marketing of their farm crops to a cooperative system that has passed the experimental stage? It seems to be largely due to their training along individual lines—to their spirit of "going it alone."

#### The Manager and Members.

The position of manager in a cooperative marketing organization is difficult to fill properly, because it is undesirable. It requires the soul of patience and self-sacrifice to stand by the job in the face of the nagging to which the man who occupies such a position is usually subjected by the membership. In some quarters it really seems the farmers think to secure better results by discouraging the manager. Frequently they make him the proverbial goat—the recipient of kicks and knocks which apparently are administered for the purpose of forcing him to jerk along

the cooperative machine more effectively. The fact that the manager can not possibly do his best under such treatment does not, as a rule, seem to occur to the members.

The most capable of officers, managers, and agents can not be expected to succeed in handling the affairs of organization unless they receive the full strength of the members' patronage and their complete moral support. The disloyal member is the chief element of failure in cooperative circles.

It would appear that owing to the very fine principle of mutual help involved, those forming a cooperative organization would be consistently loyal in their mutual relationship. But, on the other hand, unless exceptional care be exercised by the leaders, an organization from the beginning will be burdened with drones, cheats, deadbeats, and traitors.

When a grower joins a cooperative organization and then refuses to patronize it, he is a drone. He can not excuse himself even on the ground of bad management, for it is his duty to help secure proper conduct of the business.

If in selling through his organization a producer endeavors to pass off shoddy, poor-grade products, which injure the reputation of the body of which he is a member, he is a cheat.

The member who uses the special and private information of the association in making sales outside, without contributing to its support, is a deadbeat.

The man who joins a cooperative enterprise and then through subtle ways endeavors to obstruct its progress and defeat its purpose is a traitor.

Those experienced with cooperative organizations have known all these types. They are to be found in practically every community. They are the greatest enemies of agriculture and agricultural cooperation. If allowed to dominate with their dishonest practices, they will sap the energy, brains, and spirit of the officers, exhaust the moral and financial strength of the undertaking, and reduce the whole to a state of miserable failure and ruin.

There are certain safeguards that may be devised to protect the cooperative organization from these difficulties. The purpose of such an undertaking, of course, should be to secure harmony within the community and to work for its moral advancement as well as for its prosperity. Naturally, discrimination against any class of producers is not consistent with the spirit of cooperation, but if the presence of the above mentioned types endangers prospects for success and it is impossible to arrange for their control within the organization, then the members or directors in meeting should make impossible the admission of such persons.

#### Financing Cooperative Organizations

In starting a cooperative marketing enterprise one of the most serious problems is that of financing its operations. Organization and promotion work is costly, and comparatively large sums of money are needed to meet the expenses of marketing the members' products and in many cases for making advances to the growers. Much of the work each year must be done before the ship-

## The Scandinavian American Bank

OF TACOMA, WASHINGTON

With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail

## MONTE VISTA NURSERIES

**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nells, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

A. HOLADAY SCAPPOOSE, OREGON

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously

**YOUR FRUIT, POULTRY AND EGGS**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature.

Twenty years of satisfactory service to growers our best recommendation

923-5 Railroad Ave.

CHAS. UHLEN

SPOKANE, WASH.



## SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.

ping season begins, and until that time no revenue is available. Very few of these organizations have a paid in capital stock and surplus, or other assets which are liquid, sufficient to meet the expenses of the business during the heavy marketing season. It is therefore necessary to secure funds from outside sources for these purposes. Practically none have the security which is generally required by bankers in making loans to business enterprises, and as a result until recently it has been practically impossible for cooperative marketing associations to secure loans without certain of the directors and members assuming a personal liability.

#### Members' Loans to Associations

Several associations meet the expenses incident to marketing by borrowing money from their own membership. Under this plan demand notes are issued bearing a rate of interest higher than that paid by the local savings bank. Sums ranging from \$10 to as high as \$4,000 have been secured from individual members in this way. This also encourages the habit of saving and fosters the feeling of individual interest in the organization among the members.

Of a somewhat similar nature is the method used by several fruit associations whereby certain percentages of the returns from the members' products are held back from distribution to meet general expenses until the next season's business starts, at which time the entire amount due for the previous season is distributed. This simply means a holding back from the growers sums sufficient to carry the business during the season of the year when no products are being marketed. This plan has worked with success in the

## ENCLOSED FIND CHECK

Merlin, Oregon, Nov. 9, 1914. I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50.

(Signed) H. E. THOMAS. "ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

Address

**OREGON NURSERY CO.**

Oranco, Oregon

Successful Salesmen wanted.

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Kennewick, Wash.

## HARDWARE

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**HENRY MOHR HARDWARE CO.**

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marketing of citrus fruits, as the season for shipping is a long one, and there are few months when returns do not come in fast enough to take care of all advances and expenses. Methods of Creating a Surplus Fund Many organizations have provided a means of building up a surplus fund



with which to meet the expenses of the business and serve as a general working fund.

The most common method and the one which is extensively used by elevators, creameries, and cheese factories, is to set aside a percentage of each year's profits into a fund which shall be used as working capital. In this way, as the business develops and profits allow, in the course of a few years a working fund of considerable size can be obtained. If associations organized as stock companies would discontinue paying out the entire profits of each year's business and set aside at least a part of the earnings into a surplus fund, it would only be a matter of a few years in many cases until a sufficient amount could be secured to carry the business without outside help.

Another method of obtaining a surplus which is used among fruit and produce exchanges is that of an assessment per package on all deliveries by the members to the association. Under this plan amounts levied against each member are returnable in case of withdrawal from the association. Several associations have a 1-cent per package levy for this purpose. The amount of the levy per package will vary with the volume of business transacted and the sum desired for a surplus.

Another plan which has proved successful is to make a reduction of a certain sum for each package from the returns of all products shipped through the association. These deductions are considered as a loan to the association and are covered by notes due two, three, or four years after date of issue, with interest coupons attached. By this method the surplus can be held at the desired figure, except as it fluctuates with the increase and decrease in the volume of business. This provides a sufficient working capital furnished by and belonging to the growers in exact proportion in which they from year to year make use of the privileges of the association. In case they for any reason sever their connection the amounts contributed by them are returned as the notes mature.

#### Basis of Prosperity

There is no factor of greater importance to an association in securing credit than that of capable management. Credit based upon character, ability, and a record of past successes is an element which a capable management gives an association. One of the biggest bankers in this country made a statement as to credit for cooperative marketing agencies that "The management of an organization has more to do with the securing of money from outside sources than any other one feature. Where you have the right kind of management you generally have a strong organization."

Cooperation as an economic principle is receiving the serious consideration of practically all industrial classes. Its application to special lines of agricultural distribution and marketing is entirely feasible and offers a solution of problems and difficulties that are practically hopeless in so far as the individual is concerned. In the United States Department of Agriculture cooperative organization is considered to be a primary and fundamental project, for it is believed that cooperation in agriculture is a corrective measure

that will place the industry upon a solid basis and do much to insure the future happiness and prosperity of the Nation.

#### FACTORS IN PROFITABLE FARMING.

D. A. Brodie of the U. S. Department of Agriculture, is constantly making investigations in the division of farm extension work. Distance from town or station, character of roads, kind of soil and general topography are all important factors in the kind of crops which should be grown and in the measure of profit which is derived.

Figures taken from Bulletin 295 of Cornell University show that in this locality the most profitable farms are located between one and two miles from town. No doubt this marks the distance where the best combination of perishable and staple products exists, and where land values are low enough to allow fair profits after the interest on the investment is deducted.

The size of the farm is a factor in determining the type of farming. A man who is looking for a farm on which to establish a poultry plant is not likely to look for large acreage; likewise, one who contemplates general farming does not look for high-priced land near the city. These figures are largely made up from the study of representative general farms and do not represent any highly specialized types. In all these surveys the size in direct relation to the labor income. This indicates that, for general farming at least the size of the farm is important. The following table on the relation of size of farm to labor income makes this matter clear:

| Avg. Acres<br>per farm. | Avg. labor<br>Income. | Avg. Income<br>per acre. |
|-------------------------|-----------------------|--------------------------|
| 37.4                    | 416                   | 11.12                    |
| 72.9                    | 848                   | 11.63                    |
| 106.9                   | 998                   | 9.34                     |
| 149.4                   | 1467                  | 9.82                     |
| 179.1                   | 1956                  | 10.92                    |
| 239.8                   | 2758                  | 11.42                    |
| 321.8                   | 2838                  | 8.82                     |
| 623.8                   | 6182                  | 9.91                     |

#### Relation to Farming.

The type of soil is also a factor in determining the type of farming. Certain crops are adapted to one type of soil and some to another, as, for example, one set of truck crops such as cabbage, celery, turnips, etc., are suitable to a muck soil, while sweet potatoes, tomatoes, etc., are best suited to lighter soils. Likewise others do best in clay soils.

The same is true of field crops and the kinds of stock that are to be kept. In this connection such matters as drainage, rocky or stony land need to be considered. Above all the land should be fertile or a cheap means at hand for making it so.

#### LEGUMES AS FERTILIZER.

According to the various experiment stations, the legumes, such as alfalfa, the clovers, peas, vetches, etc., obtain atmospheric nitrogen through the roots and not the leaves. The process is by means of nitrogen fixing bacteria living in the nodules. Each class of these leguminous plants has its particular kind of bacteria, only that for alfalfa seems to be common also to sweet clover, and burr clover.

Above each acre of the earth's surface there are about 69 million pounds of atmospheric nitrogen, and science

Under the glass, that smooth looking spindle is as rough as sand-paper. But the ground mica in

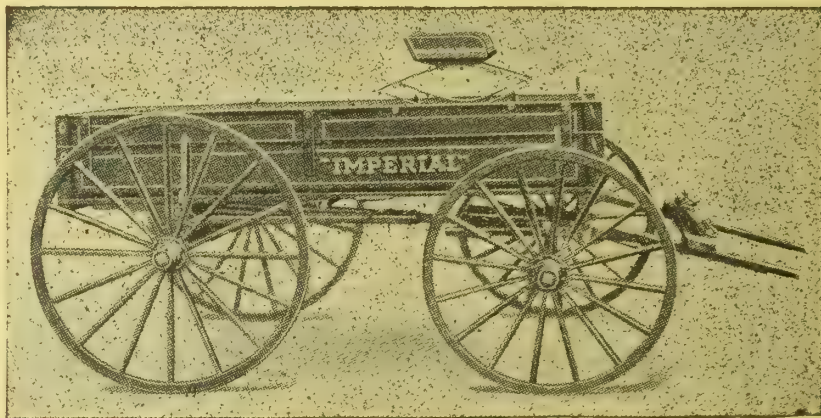


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fills up this microscopic roughness. It's a good lubricant itself and forms a smooth, slippery, heat-resisting, wear resisting coating. Thus a very little Mica Axle Grease applied occasionally preserves this lubricating film. Mica Axle Grease saves time, money and scored spindles. Dealers everywhere.

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One and one-fourth inch solid collar steel axle.  
Sarven patent Wheels, made of the very best grade White Oak Stock with rims riveted on each side of the spokes, 2x3/4 inch steel round edge tires, bolted, Double bed nine feet long with spring seat.

Heavy, well-ironed bent heel shafts, instead of straight heel as shown in illustration. Price ..... \$49.50  
Add for gear brake complete ..... \$ 6.25  
Add for pole complete in place of shafts ..... \$ 3.75

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Christopher, King Co., Wash.

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Full of helpful suggestions to make your place beautiful.—It's up-to-date, instructive. Please mention this paper and write to,

J. B. PILKINGTON, Nurseryman  
Portland, Ore.



has shown that by thoroughly scientific systems of management this nitrogen may be appropriated for soil improvement at minimum expense. By growing legumes, atmospheric nitrogen may be obtained at a low cost, often at no net cost, for most agricultural leguminous crops are profitably grown for feed or seed alone. In an experiment at Ottawa, Canada, covering ten years, with clover reseeded every two years the nitrogen content of the soil was doubled, besides a large amount of nitrogen transfixed by means of the clover was wasted.

In another experiment nitrogen gathered by legumes from the air it was found that as high as 5.5 pounds per acre per day were added by soybeans. In the Pacific Northwest the legumes are naturally at home, growing and adding to the fertility of the soil almost any month in the year. Many dairymen in the Coast section are now adopting the practice of sowing clover seed early in September and vetches a little later, for the double purpose of getting a crop by the last of the following May and at the same time enrich the soil. A vetch-rye crop or a pea-oat crop cut for silage about the last of May is followed with a corn crop which matures for silage the last of October. In several instances what appears to be rather poor upland soil has thus produced two crops while at the same time it has increased in fertility. This is possible because of the mild humid atmosphere, the nitrogen fixing power of the legumes, their adaptation and the long growing season. Clovers and other legumes are exceedingly valuable forage plants, but they have also a high fertilizing value.

#### HARD CLOVER SEEDS.

According to Farmers Bulletin 676 under certain conditions, nine-tenths or more of the well-matured seeds of red clover, alsike clover, white clover, and white sweet clover are hard. Hard clover seeds are sometimes of value, but are usually much inferior to good seeds which are not hard.

The hardness of well-matured clover seed is not influenced materially by conditions of soil, by seasonal variations, by climatic conditions, or by the time at which the seed is harvested.

The hardness of well-matured red-clover seed is not related to its color or size.

The rotting of clover in field or stack kills some of the seeds and may reduce the quality of the hulled crop, but it does not affect the proportion of hard seeds in the hulled crop after the dead seeds are removed.

The rotting of the clover in field or stack or sweating it in the mow before hulling it is not necessary. To secure the greatest yield and highest quality of seed the clover should be cured and stored with as little wetting as possible.

The rubbing which clover seed receives in the hulling machine greatly reduces the proportion of hard seeds, but frequently breaks some of the seeds.

The clover-seed huller is, therefore, an effective scratching machine. The aim should be to have the huller so constructed and so operated as to reduce the proportion of hard seeds to the greatest possible extent and at the same time to break the small-

est possible number of seeds.

#### THAT LIVE STOCK MEETING.

How a Farmer Increased His Earnings.

A Saskatchewan, British Columbia, farmer, writing to the Farmer's Advocate that he never became interested in purebred stock until about four years ago, states: I had been keeping "Grandpapa's breed" for years, and, strange to say, I had never noticed the gradual degeneration of my herd until a livestock association meeting happened to be held in a nearby town, which by chance I attended. The addresses were enthusiastic, the livestock on exhibition were of a good class and conformation, and when I left that meeting I was a "purebred" enthusiast. I am very glad I did so, for it has been the regeneration of my farm life.

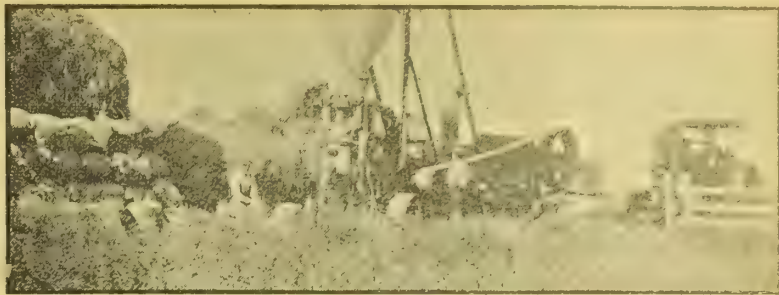
Anyone who is sticking to "Grandpapa's breed," as I did for years, should wake up and realize the decline of his stock in size, milk production, and general value. The law of reversion of type is actually at work. It is impossible for a type to stand still, it must either be improved constantly or it will go backward. Leave a cultivated garden alone a few years, the trained berry bushes go back to their wild state, flowers and plants will turn to weeds and the garden to ruin. Leave the domestic animals to run wild, and in a few generations they are back to their wild and worthless state. "What soever ye sow ye reap" is as true in the animal kingdom as in the vegetable.

I made up my mind for the future to sow the best and find the fruits accordingly. So the first thing I did after that meeting was to purchase a registered Holstein bull and make a beginning. In buying I not only looked for a pedigree but also for an animal of good size and of vigorous family. He cost me many dollars, but he is worth it and more. Since then I have been breeding up my stock, and I can see a very material difference in my young stuff. I have had practically no losses, the young stock are sleek, thrifty, easy-keeping, of good size, and healthy looking, whereas my stock in olden times had been often troubled with diseases, by which I usually lost several head every year, and they especially lacked vigor.

The offspring of the first year were, of course, half purebred, and as I have been able to breed some of these I now have some three-quarters pure, while the next generation will be seven-eighths, and so on. Last year I also purchased a valuable addition to my herd in the shape of a purebred registered Holstein cow, also another of high quality. Before long I will increase still further, and I hope some day to have a whole purebred herd.

I can materially notice the improved milking qualities of the herd since the young stock have grown up. The yield is more than half as much again as in former years. I will not be long before it is double, and, by careful selection and breeding, I can improve it still more. When I wish to sell any cattle they will bring a higher price. My interest in farming has increased tenfold, my profits are larger, my stock is better in every way. I bless that meeting every time I think of it.

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#### The Williams Patent Portable Alfalfa Mill with Sack Packer

Can be driven with steam, oil or electricity. Three sizes. One, two and three tons. Don't Haul Hay—HAUL THE MEAL. Ask for Bulletin 175. Address **OLIVER J. WILLIAMS, 260 Market St., San Francisco, Calif.**

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SMALL FRUITS  
ORNAMENTALS

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Send for our catalogue. Agents wanted.

**SALEM NURSERY COMPANY**  
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One man stump pullers cost less, weigh less, more power, variable speeds, ten year service guarantee, too with every machine. CATALOG FREE.

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# IRRIGATION

Adequate, available moisture  
at all seasons.

## ECONOMICAL IRRIGATION.

Experiment on Umatilla Project Farm  
—Best Rate of Application for Irrigating Alfalfa.

Many tests were made on the Project Experiment Farm located at Hermiston, Oregon, last year, to determine the most economical methods of handling irrigation water. The specialists in charge of this work lay emphasis on the use of short irrigation furrows, ranging from 100 to 200 feet in length, and 20 to 30 inches apart, using fairly shallow, well-opened furrows to facilitate the flow of water. They also advocate that water should be run for only a short time in one place, as loss soon occurs from deep percolation. Since the storage capacity of this soil is very low, only a small amount of water should be used for each irrigation, and frequent applications made to maintain an adequate supply for plant growth. Best results were obtained by using a comparatively large stream of water while irrigating, in order to cover the land as quickly as possible.

On virgin land without crops it was found that a 2½ inch application of water was retained in the first 4 feet of soil; 5 inches of water, applied under identical conditions, filled the first 10 feet to its full carrying capacity, and part of the water passed even below this depth. A 2½-inch application really does as much benefit to the crop as a 5 or 10-inch application. After 5 and 10-inch applications of water were made to two plats having the same kind of soil, there remained an equal quantity of water in each plat to a depth of 4 feet, and this quantity was practically the same as was retained by the same layer of soil where a 2½-inch irrigation was applied.

Where the land was of finer texture than in the above experiment, and bearing a crop of alfalfa, a 4-inch application of water was all held in the upper 4 feet. This shows that in either case, heavy losses result from applying heavy irrigations to the lighter soils on the Umatilla project.

The frequency of applying water has a very marked influence upon crop yields. An area of alfalfa given 4.4 feet of water in 8 applications yielded 4 tons of hay per acre or 0.92 ton per acre-foot of water used. Another plat given 5.3 acre-feet applied in 12 irrigations, yielded 5.3 tons per acre, or 1.02 tons per acre-foot of water. The results obtained by applying water at this rate were better than when heavier applications of water, such as 9.7 acre-feet applied in 24 irrigations were employed. The excess of water and the additional labor were not justified by the slight increase in yield resulting from the heavier applications of water.

The careful irrigator who has his distribution system, furrows, head ditches, and time properly arranged to enable him to apply just the quantity required to fill the soil to the depth of root penetration, gets a maximum benefit from the water. On the other hand, the irrigator who uses more water at a time than his soil is capable of holding, loses, by deep percolation, all of it that is not held within the root zone of his

crop, and furthermore, he may damage adjacent land by contributing to the underground seepage.

The work on the Umatilla Reclamation Project Experiment Farm in 1914 is the subject of a new U. S. Department of Agriculture bulletin, and gives a resume of the operations, drawing many deductions of value to farmers residing on the project, and may be had free upon application to the Department at Washington, D. C.

## WEST OKANOGAN IRRIGATION DISTRICT

The board of directors of the West Okanogan Irrigation District have awarded to Guthrie McDougal & Co. the contract for the construction of their \$600,000 irrigation works. The works consist of about sixty miles of main canal, flume and syphon. The contract calls for completion of the entire system in time for delivery of water for the season of 1916.

The lands to be watered comprise about 10,000 acres and lie on both sides of the Okanogan River, starting at the International boundary line above Oroville and extending to three miles below Tenasket, a distance of twenty-four miles. The water is taken by gravity from the Similkameen River, seven miles above Oroville, where the District has filed on 150 second feet of water, and amount sufficient to cover all the land to a depth of two and one-half feet, assuring thirty inches of water in addition to thirteen inches of rainfall. The Similkameen River has its source in the Forest Reserve and is fed by the melting snows of the Cascade Range, thereby assuring an ample supply of water at all seasons of the year.

The consummation of this project is the result of a cooperative spirit which manifested itself in the formation of the West Okanogan Irrigation District four years ago. It is the only irrigation project in the state of Washington under the District Law which has been successfully financed by bond issue to build its own irrigation works. The fact that the board of directors have succeeded in financing this \$600,000 project in the face of the present financial depression is ample evidence of the attractiveness of this project.

The board of directors have adopted a unique plan to insure immediate settlement and development of all the land within the District and to prevent land speculation. In order to accomplish this a farm unit of forty acres has been established. All persons holding in excess of this acreage have been obliged to place with the Board sale options for the excess acreage at a reasonable price, arrived at after careful investigation of each tract. About 3,000 acres are covered by these options, a large per cent. at prices ranging from \$40 to \$85 per acre. The terms are usually one-fourth to one-third down and the remainder on long time at reasonable interest. This is a genuine cooperative development project in the fullest sense of the term; all transactions are to be made direct with the board of directors, of which L. F. Pourtales is President, and E. Riste, Secretary, Oroville, Wash.

The Okanogan Smith orchard which lies within this project was planted in 1863, the trees having been carried in from Walla Walla, propagated from some of the first trees planted by Marcus Whitman. These trees have been annual and prolific bearers for almost fifty years, and their massive trunks and sturdy branches today

## Avoid Mistakes in Pump Buying

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FREE BOOK WHICH IS A SURE  
GUIDE TO PUMP VALUES

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The Myers Patented Glass Valve Seat  
If the Myers Pumps had no other advantage than the Myers Patented Glass Valve Seat they would still be far superior to others. This glass seat is simply the difference between drinking water from a clean glass and a rusty tin cup. Other Myers advantages, big capacity, easy operation and extralong life.

This booklet also shows the MYERS Line of Hand and Power Spray Pumps. Get it by checking and sending the coupon. Then see the pump you select at the local Myers store. More dealers handle Myers Pumps than any other make.

Dear Sirs—  
Without obligation to me, send your pocket Myers Pump Catalog. I am interested in pumps as checked below.  
Well Pump, Power Pump  
for Shallow Well  
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The Exposition gave highest honors to these Standard products made from California crudes, in competition with other gasolines and automobile oils.

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## PUMPS

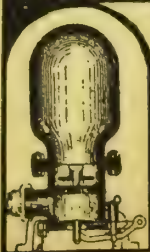
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Send for our information blanks and we will give you estimates on the best outfit for your particular needs. Ten year's experience.

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## STERLING RAMS PUMP WATER



The STERLING is an IMPROVED HYDRAULIC RAM made in all sizes for irrigation projects, city water works, farm and home water supplies, etc. Every Ram guaranteed. Capacity 2 to 5500 gals. per minute. Prices from \$25 up.

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CONDUCTED BY MRS. C. A. WANNESON

## THE PREACHER OF FAITH.

He sat on a little pulpit

That was made of the twig of a tree,

And he preached us the happiest sermon,

That bubbled with sunshine and glee.

His text was the blue sky burning

In the glory of all its sweet,

And his theme was the beauty of heaven

That lies at our very feet.

He was dressed in the softest feathers,

And he sang as well as he spoke;

And in all seasons and weathers,

His duty was lifting the yoke:

Yea, lifting the yoke of our troubles

With the cheer of his comforting word—

This preacher of faith from the bushes  
Where God has stationed the bird.

The Reverend Dominie Robin,

Apostle to me, and to all,

Of the golden gospel of beauty

The same as taught by St. Paul;

The gospel of cleanly living,

Of faith and trust and of cheer,

Gentle and true and forgiving,

With nothing to doubt or to fear.

—BALTIMORE SUN.

## MARVELOUS STRENGTH OF BIRDS

Birds can eat and digest from ten to thirty times as much food in proportion to their size as men can. If a man could eat as much in proportion to his size as a sparrow is able to consume, he would need a whole sheep for dinner, a couple of dozen chickens for breakfast, and six turkeys for his evening meal. A tree-sparrow has been known to eat seven hundred grass-seeds in a day. Relative to the bird's size, these seeds were as big as an ordinary lunch basket would be to a full grown man.

A bird's strength is equally amazing. A white-tailed eagle weighing twelve pounds, with a wing-spread of six feet, has been known to pounce on a pig weighing forty-two pounds, raise it to a height of a hundred feet, and fly off with it. The bird had covered a distance of half a mile before the pig's owner succeeded in shooting the thief.

Birds can and do work far harder than human beings. A pair of house-martins when nesting will feed their young ones in twenty seconds—that is, each bird, male and female, makes ninety journeys to and fro in an hour, or about a thousand a day. It must be remembered that on each journey the bird has the added work of catching the worm. Even so tiny a bird as the wren has been counted to make one hundred and ten trips to and from its nest within four hundred and thirty minutes, and the prey it carried consisted of larger, heavier, and harder-to-find insects than were caught by the sparrows. Among them were twenty caterpillars, ten grasshoppers, seven spiders, eleven worms, and more than one fat chrysalis.—Philadelphia Record.

## CANNING HINTS.

Sterilize jars and covers thoroughly by placing in a kettle and covering

with water, bring to boiling and boil for half an hour. Rubbers should be new and put in boiling water just before using.

Fruit should be firm, not over ripe, and carefully prepared by washing, cutting, etc.

Sugar is not essential to canning, but is added for flavor and the fruits cooked in syrup will retain their shape better than if cooked in water. Too much sugar modifies natural flavors.

Fruit should not be boiled too rapidly or it will be broken and the appearance injured.

Canned fruits and vegetables should be kept in a dry, dark place, it is well to wrap the jars in paper.

## Canned Vegetables

Wash and trim, cover with boiling water, boil 15 minutes, drain, cool, arrange for best position in jars. Fill jars to overflowing with water, lay on tops, stand jars in boiler, surround with water, cover, bring quickly to boiling and boil 1½ hours. After adjusting rubbers, screw tops on quickly and boil 10 minutes longer.—From correspondence lessons in Cookery offered by State College. Write to Extension Dept., for information.

## HARD FINISH POLISH.

The following is a most valuable polish for hard wood. Take ½ pint each of cider vinegar, wood alcohol linseed oil, and paraffine oil. Mix and keep for a while before using.

D. MORREAU,  
Tacoma, Wash.

HOW TO REMOVE STAINS;  
METHODS PRACTICABLE.

It is, as a rule, very much easier to remove stains from washable than from non-washable materials. With the latter it is always well to keep the spot confined to as small a space as possible, to rub as gently as possible, and with the threads of the material, not in a circle. To prevent a ring on silk or wool, first make a ring of cornstarch or talcum or flour just outside the stain, then apply what is needed to take out the stain. The ring of talcum or cornstarch will absorb the cleaning agent so that the ring will be very indistinct as compared to what it would have been if this precaution had not been taken.

To remove blood and fruit stains moisten carefully with warm water, then absorb the stain with cornstarch or cornmeal or talcum. If a ring appears, the whole garment may need sponging and pressing.

Milk or cream.—Gasoline or chloroform dabbed on carefully with cotton, then warm water if not entirely removed.

Grass, paint, and varnish.—Use alcohol for the first, and turpentine or alcohol for the last two.

Perspiration. — Ammonia applied gently with a bit of cotton is effective.—Clara M. Eckhardt, Home Economics Department of the University of Wisconsin.

## CANNING SWEET CORN.

Now when good sweet corn is so easily procured is the time for the housewife to can some for use next winter. When the corn selected is



Gas Stove Convenience with Kerosene

Cooks the Cooking  
Not the Cook

A good oil stove concentrates all its heat at the cooking point. That avoids an overheated kitchen and that means comfort for the cook even on hot, sweltering summer days.

New Perfection  
Oil Cook-Stove

For Best Results Use Pearl Oil

An oil stove brings the convenience of gas to homes without gas. No heavy fuel to carry. No dirt and ashes. And yet it cooks anything a big coal or wood stove does. It is clean, convenient, economical. No odor. Does not taint the food. Ask your dealer. See exhibit, Palace of Manufactures, Panama-Pacific Exposition.

## STANDARD OIL COMPANY

(California)

Tacoma

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## THE MULTNOMAH HOTEL

a handy, commodious hostelry, with moderate priced rooms, when stopping off in this city on their way.

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on a strictly honest basis. If we tell you a car is in good condition you can depend on that fact. Positively no misrepresentation. Write us your wants. Used cars from \$75 up. Gas engines from 1 h. p. up. Prices right.

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Manager.

Tacoma, Wash.  
W. E. SHOEMAKE,  
Secretary & Treasurer



young and tender and it is canned soon after gathering, the product is far superior to the commercially canned corn. Those who have tried home-canned corn one year do not have to be urged to try it again.

According to the department of home economics of the University of Missouri at Columbia, corn is more difficult to can than fruits and most other vegetables. This is because the corn forms such a compact mass that it is hard to heat through, and because it is more difficult to kill the micro-organisms which cause it to spoil.

To can corn, boil it in salted water, just as if you were going to serve it, from 10 to 15 minutes. Cut it from the cob and pack it in quart jars. Add enough boiling water to completely cover and a rounding teaspoon of salt to each quart. Put on the covers of the jars loosely and place the jars on a rack of some kind in a boiler. Put in enough clean water to completely cover and boil four hours, counting from the time when the water commences to boil. When the time is up, remove the jars from the water and tighten the lids while the jars are still hot. This is more easily done with a spring seal than with a screw neck jar.

#### KITCHEN RECIPES.

##### To Whip Carnation Milk.

Place one can of Carnation Milk in water and heat to boiling. Remove promptly, and thoroughly chill by placing can on ice. When cool, open can and pour milk (the entire contents small can or half contents of

large can), into chilled bowl, placed in another bowl filled with cracked ice. After milk has become thoroughly chilled, whip in regular way with ordinary egg beater for about five minutes. Sweeten and flavor if desired. Keep on ice until served. Carnation Milk will whip satisfactorily without heating, but better results are assured when above directions are followed closely. Serve on fruits, gelatines, and other desserts, as well as with chocolate, cocoa, coffee, etc.

##### Carnation Muffins

Two cups of flour,  $\frac{1}{2}$  teaspoonful salt, 2 teaspoonfuls baking powder, 1 tablespoonful sugar, 1 egg, Carnation Milk. Sift together the flour, salt, baking powder, and sugar. Add the beaten egg, and enough Carnation Milk diluted equally with water to make a rather stiff batter. Pour into greased muffin tin, and bake in a quick oven.

##### Ginger Bread

Two cups flour,  $\frac{1}{2}$  teaspoonful soda, 1 teaspoonful ginger,  $\frac{1}{2}$  teaspoonful cinnamon, pinch of salt. 1 teaspoonful lard,  $\frac{1}{2}$  cup sugar, 1 egg, 2 tablespoonfuls Carnation Milk, 6 tablespoonfuls water,  $\frac{1}{2}$  cup molasses. First sift flour, and then measure two cups. Add soda, ginger, cinnamon, and salt to flour, and sift twice. Cream the lard and sugar, and add the well beaten egg. Beat this mixture thoroughly. Mix the molasses with the diluted Carnation Milk, and add alternately with the flour, a little at a time. Bake in one layer.

##### Baked Custard

Two eggs, beaten light, 3 tablespoonfuls sugar, grated nutmeg, 1 cup of Carnation Milk diluted with same amount of water. Mix together and pour into buttered pan and grate nutmeg over the top. Set in a larger pan of boiling water, and bake in a moderate oven. Insert a clean knife blade, and when it comes out clean the custard is done. Watch it closely to avoid cooking too much.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

#### PASTERIZE FOR UNIFORM OUTPUT.

##### Butter of Standard Quality.

As the Oriental and European markets are now bidding for American butter the question of standard quality and volume confronts both the dairymen and the shippers. Already comes back word from merchants that both the quality and the form of packing by Americans does not please the wholesale buyers in Australia. To suit their taste the butter must be of high quality and uniform through all the packages. And they want uniform weight of the packages, smother and better made boxes in which the butter is contained and a little more care as to the style and form of the box markings. It seems that instead of a uniform weight of 50 pounds as intended, the actual weights ran from 46 to 55 lbs., and instead of the brands being printed into the wood they were put on with stencils and a cheap blackening giving the buyer the impression that the package contained ordinary axle grease. Do our dairymen want these outside markets? If so then it will be necessary to conform to the wishes of representative buyers from their markets in every detail.

##### To Get Uniform Flavor.

It is generally considered a good practice to pasteurize cream and it might be necessary to establish that

requirement for the butter going into the export trade. B. H. Rawl, Chief of a Dairy Division, Washington, D. C., states that creameries generally are of the opinion that pasteurizing is too expensive, that it doesn't pay. In several plants investigated the cost was from less than half a cent to one cent for each hundred pounds of cream.

Even in the most inefficiently arranged plant investigated the cost per pound of butter is insignificant. It is quite possible that if the procedure, which has been found satisfactory in many cases, consisting in pasteurizing, cooling, adding the starter and churning, is followed, the routine of the creamery operations may be so adjusted that the butter can be made with a smaller consumption of coal than by the ordinary procedure of making butter from raw cream.

Will the quality of butter made from pasteurized cream be superior to that made from raw cream? Arguing from the other side, Mr. Rawl permits the view it is by no means certain that this will be the case. A buttermaker who through slipshod methods is making poor butter from raw cream would probably use the same methods in making poor butter from pasteurized cream. Indeed the process of pasteurization may offer him another opportunity to injure the flavor and body of his butter. On the other hand, some buttermakers who have exceptionally good



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#### OUTFITS \$11 AND UP

Can and sell your surplus products. Send for our 32 page booklet, free.

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Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.



For your Barns, Silos, Roofs, etc. Red-Brown-Protective-Permanent. Trial gallon delivered by parcels post on receipt of \$1.00.

Write for prices on quantities.

MASHELL PAINT CO.  
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## Waikiki Farm

Breeders of

JERSEY and Ayrshire Cattle  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26 1/2 lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

## COTTONWOOD GROVE STOCK FARM

#### CHOICE HOLSTEINS



Some fine young bulls to offer out of Homestead Jr. De Kol and Butter Boy 3rd breeding, sired by Dutchland Sir Fayne Colanthe, whose dam and sire's dam average 30.76 lbs. butter in 7 days, 122.93 lbs. in 30 days; brother to Grace Fayne 2nd Homestead, former world's champion. His three sisters averaged over 33 tons milk in one year. Health, condition and breeding all guaranteed. Prices reasonable. Please mention this paper when writing.

ALBERT JOHNSON  
SCAPPOOSE, OREGON



material are making raw-cream butter in which there is little room for improvement. I think, however, that nearly all experienced buttermakers will agree that under any but the exceptional conditions a better and more uniform product can be made by pasteurization. There can be no question that this is true if the butter is intended for storage, although in many cases the advantage gained by pasteurization is lost by developing too much acidity in ripening. Ordinarily the buttermaker does not know that his butter is to be used for storage, but the same qualities that make the butter desirable for storage help to get it to market in good condition.

Admitting that the cost of pasteurization is insignificant and that the quality of the butter is improved, will the creamery get more for this better butter than it did for the lower grade raw cream butter? Unless the difference is marked it is probable that there will be no immediate returns.

While there is an increasing tendency to widen the difference in price between different grades the market is not likely to respond to minor differences in quality. The creameries that are getting the highest prices for their product are those which have established a reputation with the buyers for turning out butter of a uniformly good quality. They have established this reputation by attention to details and a majority of them have undoubtedly found that in the long run it pays to pasteurize.

#### TESTING FOR BUTTER FAT.

R. E. Huntermark, of the Agricultural Experiment Station, Pullman, Wash., explains how to use the Babcock test, with illustrations, in Bulletin 75.

The most practical method of testing for butter fat in milk is by means of the Babcock test. Although this test was invented more than twenty years ago, its use has not become general among the dairy farmers of the state. A better knowledge of the test and its various applications, accompanied by its general use, would result in the elimination of our unprofitable cows, more uniform payment for milk by cheese factories and milk condensing plants, and more accurate fat readings by creameries with consequent greater satisfaction among the patrons.

The Babcock test is of value to the farmer in that it eliminates guess work. By means of this test the percentage of fat in each cow's milk can be accurately determined. The poorer animals can be eliminated without fear of mistake. Selecting to improve the average of production can be continued with considerable certainty of success.

It has been found that the test of a two-day composite sample, accurately taken, is representative of the fat content of a given cow's milk for the month. When this is supplemented by accurate daily weights of milk produced by the cows in the herd and the test of the two-day sample is multiplied by the weight of milk for the day or month, the amount of butter fat for the day or month is determined. By repeating the test each month, it is possible to determine the amount of butter fat for the lactation period or for the year. This is of great advantage when any method of herd improvement is undertaken, by the selection

of high testing cows, or otherwise.

Farmers should insist on being paid for milk according to the amount of butter fat it contains. A Babcock tester on the farm will enable one to check the records as shown when milk is delivered in the town, city or factory. The proper test of cream is of still more importance in that errors are more likely to occur when testing cream and a small error in testing cream represents considerably more butter fat than when testing milk.

Determining the butter fat in milk and milk products by means of the Babcock test is an accurate, inexpensive and comparatively easy process. The proper application of the test demands some knowledge of the materials worked with and the exercise of reasonable accuracy on the part of the operator. With its value and usefulness better understood, the test will become an invaluable part of the equipment of every dairy farm and with its increased use on the farm there will be more careful work done by those who handle milk and creamery products.

#### Apparatus Necessary for the Test.

1. Centrifugal machine, 2, 4, 8, or 12 bottle capacity.
2. Milk, cream and skim milk test bottles.
3. A pipette of 17.6 cc. capacity.
4. An acid measure of 17.5 cc capacity.
5. A glass beaker of about 200 cc. capacity.
6. A tempering vat.
7. A pair of dividers.
8. A balance for weighing cream samples.
9. Milk sample bottles.
10. Milk preserving tablets.
11. Washing powder.
12. Thermometer.

#### Method of Proceeding for Milk

1. Temper samples of milk from 70 to 80 degrees F.
2. Temper acid to same temperature as milk.
3. Mix the sample by pouring from one vessel to another.
4. Quickly draw 17.6 cc. milk from the well mixed sample.
5. Allow milk from the pipette to flow into the test bottles, holding bottle in slanting position.
6. Blow out the drops of milk adhering to the end of the pipette.
7. Measure out 17.5 cc. of acid of proper strength.
8. Add acid slowly to the milk in the test bottle, holding the bottle in a slanting position and rotating bottle to wash down the milk adhering to the neck of the bottle.
9. Mix the contents of the test bottle as soon as the acid has been added by horizontal rotary motion.
10. Balance bottles in the pockets of the centrifuge.
11. Whirl for five minutes as soon as possible after filling.
12. Fill bottles to the neck with hot water.
13. Whirl bottles for two minutes.
14. Add hot water to the bottles until all the fat is in the neck of the bottle.
15. Whirl bottles one minute.
16. Temper bottles at from 120 to 140 degrees Fahrenheit.
17. Use the dividers and read the tests while hot.
18. Empty the bottles immediately, shaking vigorously, wash in soda solution.

#### Testing Cream

1. When testing cream, weigh sam-



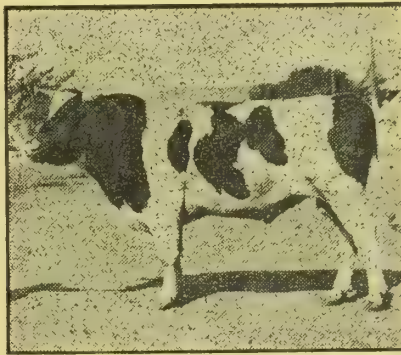
## Puget Sound Herd Holsteins

HERD Sires—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

Five first daughters of Quirinus Cornucopia tested at an average age of 2 years 1 month, have made records that average 19.5 lbs. butter in 7 days, 2000 lbs. milk and 76.1 lbs. butter in 30 days. One 2-year-old in the yearly test produced in 9 months 17,915 lbs. milk and 725 lbs. butter.

Sir Chimacum Wayne is the world's greatest milk and butter bull. His sons up to 5 months of age are now being offered for sale. Our herd numbers 250 head and we can supply registered stock for foundation herds and for good working dairy herds at right prices.

WM. BISHOP, Prop.  
Chimacum, Wash.



#### VALLEY VIEW DAIRY FARM

Registered Holstein bull calves of all ages for sale.  
Calves sired by Mutual Fobes Longfield De Kol and Annie De Kol Lakeside Model. Both proven sires with better than 30 lb. dams and better than 30 lb. sisters. Both are show animals as well and of high class. Also some females of all ages for sale.

For particulars, description and price, write,

H. C. DAVIS, Granger, Wash.

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

## GLENDAL CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

GLENDAL CREAMERY CO.,

D. S. Troy, Manager.

Chimacum, Wash.

## Holstein Home Herd

Watch this space from month to month for what we have to sell this year. Young cows and heifers bred to Mutual Fobes Longfield De Kol, No. 82959, the Grand Champion bull at the Washington State Fairs, 1913 and 1914, and a few choice ones bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old.

E. B. MARKS

Route 5, NORTH YAKIMA, Wash.



ples, do not measure.

2. Use about one-half as much acid as for testing whole milk.

3. Fill bottles to the neck with hot water immediately after adding acid.

4. Whirl bottles for five minutes.

5. Add hot water to bring the fat into the neck.

6. Whirl the bottles for two minutes.

7. Temper bottles at from 120 to 140 degrees Fahrenheit.

8. Read the tests from the bottom of the fat column to lower part of upper meniscus.

#### Testing Skim Milk.

1. Follow out all the directions as with milk.

2. Use a small amount more acid.

3. Centrifuge bottles at a slightly higher speed.

#### AMERICAN GUERNSEY CATTLE CLUB ISSUES VALUABLE PAMPHLET.

The American Guernsey Cattle Club, Peterboro, N. H., has recently published a valuable pamphlet for the benefit of Guernsey breeders and the public in general who are interested in knowing what this breed is accomplishing. This pamphlet is of handy size, neatly bound in a gray cover, is well illustrated with pictures of the leading cows of the breed and contains much valuable information. In the forepart of the book appear statistics regarding the Advanced Register work which have been compiled in such a way that they make very interesting reading. Fifty-five of these cows have three or more yearly records. The names of these animals, together with the production and the ages at which the records were made are given in detail. What is known as the 35 class leaders or the cows holding the five highest records in each of the several classes from two years of age to five are given as they appeared on April 15th, together with the average of all cows tested in each class and the average for the breed.

#### CASCADE SHOW SUPPORTED BY SHORTHORN ASSN.

American Shorthorn Breeders' Association Votes to Donate \$330.00 to Add to the Liberal Premiums Already Offered by Cascade International Stock Show.

Editor:—It gives me great pleasure to advise the Shorthorn breeders and exhibitors of the Pacific Northwest that the Cascade International Stock Show has been given very considerate recognition by the American Shorthorn Breeders' Association in that the Executive Board of that body has voted a special appropriation of \$330 to Shorthorn classes exhibited at the Cascade International at North Yakima in November, the Shorthorn Association giving \$1.00 in premiums for every \$2.00 given by the Cascade International.

It is especially gratifying to our 225 members that as young an association as ours has received such substantial recognition by this great national association.

S. B. NELSON,  
Secretary.

#### VERMONT GUERNSEY HIGH RECORD.

The Guernsey cow, Novice Masher 33365, A. R. 2609, bred and owned

by E. R. Andrews of Putney, Vermont, produced 13649.00 pounds of milk and 706.97 pounds of butter fat, as a three and a half year old, carrying a calf seven months. Her highest production was made in the month of December, when she produced 67.19 pounds butter fat, and her lowest month's production was 54.15 pounds of butter fat, thus showing the persistency with which she completed her record.

She was sired by Triple Champion 13067, A. R., who has seven A. R. daughters and several more are now under test. Her dam, Novice 3d, 23057, was purchased from the James M. Codman herd of Brookline, Massachusetts, and traces back to one of the earliest imported animals.—A. G. C. C.

#### SILOS AT CARNATION STOCK FARM.

The Carnation Stock Farm in the Snoqualmie Valley, which is owned by the Pacific Coast Condensed Milk Co. people, has recently purchased 3 silos from the Pacific Tank and Silo Co., of the 18x34 feet size. The milk from ensilage fed cows on this farm will go into the Carnation brand.

Mr. Hollis of the Pacific Tank and Silo Company reports increase of silos this year of over 25 per cent. above the number sold last year.

#### JERSEY BULLS FOR SALE

from Pogis Torono Stock of  
HOOD FARM

A few high class young bulls for sale. Sired by Torono's Olinda's Pogis, a grandson of Pogis 9th and Torono of Hood Farm. These bulls have a larger number of cows in the 800-pound butter class than any Jerseys in the world. Also two pure bred registered Percheron stallions by Surugua, Champion of Alaska-Pacific Exposition. They are full brothers two and three years old, solid black; none better can be bought. Will sell on terms.

**Charles Richardson**  
Richmore Farms, R.F.D. So. Tacoma

#### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

#### Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice pure-bred

POLAND CHINA PIGS

Write for prices.

**E. L. Lloyd**

Box 466

Monroe, Wash.

#### Electric Light Farm

#### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculine tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

## Western Washington Holstein Breeders' Association

Will hold its

## SECOND SEMI-ANNUAL SALE

on the

## Snohomish County Fair Grounds Snohomish, Washington

SEPTEMBER 15, 1915

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Seventy-five head of HOLSTEINS. The "Best in the West" will be sold at this sale.

For a copy of the Catalog that will be ready for mailing September 1st, address the Secretary

Auctioneer  
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North Yakima, Wash.

A. B. Winter, Sec.  
1515 Hewitt Ave.  
Everett, Wash.



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

#### SKYKOMISH VALLEY HERD

#### HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

## Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## A. J. C. C. JERSEYS

Big Producers

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**  
Grandview, Wash. (Yakima County)



**DAIRYMEN'S CLUBS.**

It is a good time to organize clubs among farmers to promote dairy interests in the community. Organizations composed of five or six farmers whose views and general methods of farm operation coincide somewhat. They should have for their object specified in writing practical feed plans, including the growing of leguminous crops to provide for a complete balanced ration so far as conditions will permit, provision for ample shelter, agree to bestow necessary care in all detail requirement for good dairy work; to decide on a choice from among one of the dairy breeds; to use only pure bred, tested sires and stay with the chosen breed.

Groups of farmers of integrity uniting on plans this autumn are in line for credit extension from local banks at reasonable rates of interest, for the purchase of dairy cattle or other equipment. Start the ball rolling in your community by getting in touch with a few of your neighbors and give the club a name and proceed on the sure way to prosperity and comfort.

**THE NEW DAIRY QUEEN.**

The Holstein-Friesian Cow, FINDERNE PRIDE JOHANNA RUE No. 121083 H F H B, is the new Queen of the dairy world, exceeding in yearly butterfat production the best performance of all other cows, regardless of age, class, or breed. The new crowned queen in a 365-day test, supervised by the New Jersey Agricultural College, produced 28403.7 lbs. of milk (13211 quarts) containing 1176.47 lbs. of butterfat. The best former record was held by the Holstein-Friesian heifer, FINDERNE HOLINGEN FAYNE No. 144551, who produced in a yearly test 24612.08 lbs. of milk containing 1116.05 lbs. of butterfat. FINDERNE PRIDE JOHANNA RUE freshened at the age of five years, four months and four days. She was bred by Bernhard Meyer of FINDERNE, N. J., and is owned by the Somerset Holstein Breeders Company of Somerville, N. J. She was sired by JOHANNA RUE 3d's Lad No. 26936 H F H B, and her dam was JONDINE PRIDE No. 60247 H F H B.

**CONTAGIOUS ABORTION WARNING.**

The State Department of Agriculture says no dairy section is free from this disease. No cure is known but it may be prevented by adhering to cleanliness and a proper use of disinfectants.

In theory it is quite possible for abortion to be caused by moldy silage, smutty grain, pine branches, or from sprains or bruises. However, as a matter of fact, these causes are so rare as to enable us to disregard them almost entirely. And the sooner we do it and begin to suspect the real cause, the micro-organism of abortion, the better our chances of successfully checking its progress.

This tiny organism, known as the bacillus abortus which can only be seen by the aid of a microscope, can live in about every tissue and fluid in the body of a cow. The place most favoring its rapid growth and reproduction, however, is the fluid and tissue between the foetus and the womb. Here it thrives and reproduces so rapidly that soon the delicate communication between

mother and foetus is interfered with and the foetus dies and is expelled with or without the membranes as mentioned above. Sometimes this occurs the first two or three months of gestation. More commonly it is near the seventh, in which cases the impending abortion is preceded by the discharge of brownish colored fluid and also by the signs of normal parturition, as "making bag," springing," etc.

**CREAMERIES TO EXHIBIT.**

Dr. H. T. Graves, commissioner of agriculture, is urging all creameries in the state to exhibit at the State Fair at North Yakima. Milk butter and cheese will have special classes, and only Washington manufactured products will be exhibited. It is expected that the creameries and factories for all kinds of dairy products will make the best of the opportunity. H. A. Frevert of the United States Department of Agriculture will award the prizes in the dairy products department.

All dairymen should be interested in dairy exhibits at the fairs. Standard quality and volume will command the foreign buyers.

**NEW OLEO BILL.**

The main features of a new Oleo bill proposed by the National Dairy Union are:

- (1) The adoption of a color standard for oleo, and the prohibition of its manufacture or sale under any conditions when the degree of yellow coloration is greater than that prescribed.
- (2) The limiting of the amount of butter fat that may be incorporated in oleomargarine to 5 per cent.
- (3) The adoption of a uniform tax rate for all oleomargarine.

The other features of the bill were left in the same shape as the National Dairy Union had prepared in a measure introduced in Congress nearly two years ago, known as the

## "DOG DAYS" the best time to buy a DE LAVAL SEPARATOR

THERE was never before as good a time to buy a De Laval Cream Separator as **right now.**

The "Dog Days" are at hand when dairying is most difficult without a separator and when the increase in quantity and improvement in quality of cream and butter are greatest through the use of a good separator.

Then there is the great saving of time and labor, which counts for more in summer than at any other season and often alone saves the cost of the separator, aside from all its other advantages.

This is likewise the season when De Laval superiority counts for most over other separators,—in closer skimming, larger capacity, easier running, easier handling, easier cleaning and absolute sanitation.

A De Laval Cream Separator bought now will easily save its cost before the end of the year, and it may be bought for cash or on such liberal terms as to actually pay for itself.

**De Laval Dairy Supply Co.**  
101 Drumm Street 1016 Western Avenue  
SAN FRANCISCO SEATTLE

**JUANITA STOCK FARM HOLSTEINS**

Home of Margie Newman, the world's record cow, No. 76312. Our senior 2 year old Phiebe Cornucopia, produced 101.9 lbs. milk in one day 24.5 lbs. butter in 7 days. 12 cows of our herd have record of over 100 lbs. milk per day. Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman. Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,  
CHIMACUM,  
WASH.**

Kindly mention this paper

Aaggie Nena Cornucopia, 2-year-old  
Milk 1 day, 105 lbs., 7 days, 684.1 lbs., 30 days, 2733.3 lbs.  
Butter 7 days, 24.06 lbs., 30 days, 95.037 lbs.

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

**E. R. BRADY  
Satsop, Wash.**

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,  
Seattle, Wash.**

Please Mention Horticulturist & Dairyman

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

**WHY USE A SCRUB BOAR?**

When you can buy a pure bred registered Berkshire boar pig from prize winning, prolific stock for \$20.00 each for the next 30 days. Don't put it off but order from this advertisement at once.

**SILVER BIRCH FARM**

R. F. D. No. 1, Box 3.

Newport, Wash.

## HIGH GRADE YOUNG HOLSTIEN COWS FOR SALE

You can make some very choice selections in our herd of fresh young cows which will become very heavy milkers at mature age. They are in excellent order, a large number on hand from which to choose. They have pure bred sires, with good producers back on both sides, and their type and daily milk yield is evidence of quality. Health guaranteed.

For further particulars and prices write or call.

**F. F. FOLSOM  
KENT WASH.**

**LAKESIDE STOCK FARM HOLSTEINS**

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

**P. A. FRANKS**

Scappoose, regon

## DAIRYMAN WANTED

Fine opening for a good dairyman who has a few cows or some cash. For particulars, address "Z," care Horticulturist, Tacoma, Wash.



Haugen Bill.

It is generally conceded that the time has arrived for oleo to be sold for what it is, and at the same time giving consumers a substitute for butter at a reasonable price, instead of paying excessive prices as has been the case too often in the past.

The probabilities are that oleo manufacturers who are anxious to sell their product on its merits at a reasonable profit will not oppose this measure.

#### CO-OPERATIVE CREAMERIES.

In order to make a creamery truly cooperative and successful, the creamery should be operated entirely by the farmer, says O. W. Holmes, of the Idaho Station. The business man in town might be permitted to buy stock and receive dividends, if such were issued, but they should have no word or vote in the operation and control of the creamery unless they are milking cows and sending cream to the creamery.

Poorly qualified butter makers or managers are sometimes responsible for the failure of creameries after they have been organized and started. A butter maker should not be placed in charge of the butter making room simply because he has agreed to work for a smaller salary than another. He should be thoroughly examined as to his qualifications and ability to make butter and as a rule, it is generally safer to employ a \$100 man than a \$75 man. A butter maker or manager should be educated in making butter and in the operation of the creamery, and should have some experience before being employed as head butter maker or manager.

At the present time, there is no good reason for creamery failures since the dairy department of any agricultural station is ready and willing to give assistance and advice on the organization and building of creameries. Information along this line will be furnished to any who makes inquiry to the dairy department of his state experiment station.

#### BARLEY FOR COWS.

A little barley fed to cows while in milk, whether stall or grass fed, serves to keep up vigor and maximum production according to bulletin 256 of the Berkeley, California, station. Too much barley or other grain fed does not pay, but a moderate amount is profitable for young cows and heavy producers in connection with alfalfa and grass.

#### TRAINING TO FIT FOR SHOWS.

Miss Louise McGavick, Tacoma, won highest honors at the State College, Pullman, for excellence in fitting an animal for exhibition. Her subject was the Ayreshire cow, Princess Edna, whose record was 40 pounds milk and 2 lbs. butter fat a day. It would not be surprising to hear of Miss McGavick having a pure bred prize winning herd of her own in the near future.

#### SECOND HOLSTEIN SALE.

By Western Wash. H. B. Assn. The second sale of the Western Washington Holstein Breeders Association will be held at the Snohomish Fair grounds September 15. The first sale was a success, both from the sellers and the buyers standpoint. The contributors put up stock of high quality and buyers were not

slow to appreciate the opportunity afforded, nor were any disappointed so far as is known.

The same contributors of this sale feel they cannot do otherwise than to offer the kind and quality of cattle for which they would be willing to pay the prices as they expect from buyers were they in position to require replenishing instead of having a surplus, for they are laying foundation for public sales which in the near future will attract buyers, not only local, but from adjoining and the far eastern states, and their reputation is at stake.

About 75 head will be offered, mostly young cows. Among them A. E. Smith, of Sumas, contributes 2 young bulls and 11 young cows, all from A. R. O. breeding. One has a dam with a record of 25 lbs. butter per week; 2 are out of 24 lb. record dams, and one is half sister to worlds record cow, Tilla Alcartra. Wm. Bishop, owner of the worlds best bred bull has an abundance of high record animals from which to choose, and our readers all know that fair play is his disposition. Herman Steffen has a fine working herd throughout with butter fat records, well up near the top line. Hugh Nesbit has a bunch of uniform young cows, all above A. R. O. requirements.

C. E. Eldridge has made the world record for one day milk production, and there is nothing about his place resembling a cow but which are phenomenal producers.

P. Govan, who paid the record price for the bull sold at the first sale, knows the value of good foundation stock, is consigning a few whose records are indicated in the catalog. The Greenbank Farm will consign some youngsters whose grand-sire is King of the Pontiacs, and with high record A. R. O. dams. This sale is not only timely, but it is an opportunity for which many of our readers will be glad to make preparations to purchase.

#### TOMAHAWK

Registered Guernsey bull, 6 years old, intensely linebred, in the Yeksa family. 5 closest kin have A. R. O. records averaging 625 pounds fat; splendid individual and his prepotency has been demonstrated. Also several young heifers and bulls sired by Tomahawk for sale.

C. G. HENKEL,  
Opportunity, Wash.

#### Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock.

Also Registered Ayreshire Bull Calves at reasonable prices.

F. I. MEAD,

524 California Bldg.  
TACOMA, WASH.

#### "B. K. M. BERKSHIRES"

Bred Gilts, Sows and Boars for sale

Good pigs \$10.00 to \$15.00 each.

WOODLAND FARM

Lacey, Thurston Co., Washington

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

M. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

#### GOOD REGISTERED BERKSHIRES

Choice pigs, \$10 each at weaning time.

W. D. GOOD, Mt. Vernon, Wash.

## Sick Animals Pick Your Pockets

EVERY sick animal robs you of profit. You lose real money unless you keep your stock healthy and vigorous. You can prevent and cure disease in your animals by using Zenoleum, and following directions on the can. Zenoleum is used and endorsed by 50 Agricultural Colleges in U. S. on experimental farms and by the biggest breeders and farmers. The greatest live stock authorities use and recommend

COAL-TAR  
**ZENOLEUM**  
DISINFECTANT-DIP



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Send a dollar bill for a can of Zenoleum, post-paid, sufficient to make 50 gallons of positive disinfectant. Full gallon can to make 100 gallons, \$1.50 parcel post paid; quart can for 50 cents post-paid. Must do all you want it to do or back comes your money—no argument, just money. FREE: Zenner's Veterinary Adviser, 64 pages. Full of valuable information. A dollar book for nuthin'.

Zenner Disinfectant Company  
361 Lafayette Ave. Detroit, Mich.

## HOLSTEIN FOR SALE

Do you want some good foundation stock from high record A. R. O. breeding and choice servicable dairy cattle. Then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

### TYSON & McKELHEER

Moxee City, Wash.

## Cascade International Stock Show

THE GREAT MID-WINTER STOCK EXHIBITION

\$15,000.00 in Premiums

For Premium List Address

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

#### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

MOUNTAIN VIEW FARM

Mt. Vernon, Wash.

Otto Rundgren, Prop.

#### FOR SALE

Twenty to one hundred acres near Snohomish which has one of the best Industrial High Schools in the state. On R. F. D., good road, good location, good soil, well watered. Would make a fine dairy or stock farm.

D. F. SEXTON, Snohomish, Wash.  
R. F. D. No. 1, Box 84.

#### For Sale

**Duroc  
Hogs**

Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.

H. A. SIMONDS  
Bothell, Wash.

#### REGISTERED

## Berkshire

FOR SALE—Boar, 2 years old. Will trade for boar of equal breeding. Also 8 weeks old pigs from Registered stock.

R. H. KELCYSKE  
SYLVAN, WASH.

#### BERKSHIRE SWINE

Choice registered weaning pigs at \$10 to \$15, satisfaction guaranteed or stock returnable.

HOMER NELSON,  
Box 288, Marysville, Washington.

#### O.I.C. Hogs

English Shire  
Horses

Pigs farrowed in May, from my Champion and Grand Champion sows at 1913 Washington State Fair are now booked to fill orders at weaning time. All stock sold strictly first class. English Shire stallions 1 to 3 years old. Write for prices. A. L. PIERCE, Granger, Wash.

FARM LANDS—In Central Washington, improved and unimproved. Particulars on application. References. H. B. CARROLL, Ellensburg, Wash.

AT STUD—Pure bred Swiss Toggenburg buck, King Solomon No. 258 A. M. G. R. A. Write for service fee. M. P. EGGERS, R. D. 3, Tacoma, Wash.



## STOCK

### LIVE STOCK AT P.P. EXPOSITION.

Washington breeders are preparing to make exhibit of live stock at San Francisco. In a recent press bulletin D. O. Lively states:

The West is hungry for live stock, and now that there have been modifications in the quarantine that has been maintained because of the foot-and-mouth diseases, business will be resumed and breeders and dealers can fill their delayed orders.

According to the new bulletin, Arizona, Colorado, Idaho, Nevada, Nebraska, North Dakota, New Mexico, Oregon, South Dakota, Utah, Washington and Wyoming can ship animals into San Francisco accompanied by a certificate of inspection issued by a duly authorized Federal or State Veterinary Inspector and the mailing of a copy of such certificate to the State Veterinary at Sacramento, California.

The Tuberculin Test naturally applies to cattle, except those that are intended for exhibition at the Exposition. There are several other States that are in process of being cleaned up, and it is reasonably safe to assume that within plenty of time in advance of the show dates at San Francisco, every section of the United States will be privileged to make shipments of live stock.

There is a widespread interest in the live stock show at San Francisco. The appropriations made by Associations and by States are still standing, and reservations already made for stalls and pens assure a splendid display.

### FLY REPELLENTS.

Various oils, emulsions of oils, and mixtures of oils are used in repelling flies. Crude petroleum, cottonseed oil, fish or train oil, and light coal-tar oil may be used pure.

Jensen (1909) recommends the following formula which is said to protect cows for a week.

Common Laundry soap .... 1 Pound  
Water ..... 4 gallons  
Crude petroleum ..... 1 gallon  
Powdered naphthalin ..... 4 ounces

Cut the soap into thin shavings and dissolve in water by the aid of heat; dissolve the naphthalin in the crude oil, mix the two solutions, put them into an old dasher churn, and mix thoroughly for 15 minutes. The mixture should be applied once or twice a week with a brush. It must be stirred well before being used.

Fish oil is rated as one of the best repellents and has been used alone and in combination with various other substances. Other substances that have repellent qualities and that have been used in various mixtures are pine tar, oil of tar, crude carbolic acid, oil of pennyroyal and kerosene. The protective action of fish oil is stated to range from less than two days (Parrott, 1900) to six days. Moore's formula is said to protect for two days. This mixture is safe when applied lightly with a brush, but not when applied liberally with a pail spray pump. The formula is as follows:

Fish oil ..... 100 Parts  
Oil of tar ..... 50 Parts  
Crude carbolic acid ..... 1 Part

Laurel oil is a very effective repellent. Mayer (1911) found that the protection lasted from 2 to 12 days.

## POULTRY

### MOULTING HENS.

True to her sex, in the months of late summer and early fall, Bidly will turn her thoughts to change of raiment. Mrs. Whitaker of the Poultry Department of the State College of Washington takes the position that time and food for the renewal of her robe is the due of the good layer, but cautions poultry men against mistaking the early moulters for the profitable egg-producers. Mrs. Whitaker states that in general, the profitable pullet is the one that begins egg production not later than November, and continues her first laying period during at least 10 months, or up to September 1st. The pullet that, along in June or July, stops laying to shed her feathers and set about dress reform, has cut short her period of profitable egg production to seven or eight months.

Early in July, hens that have quit laying for the season should be culled out and marketed. The profitable birds to hold over the second year are those pullets that proved themselves winter layers, and moreover, continue egg production throughout July and August, when strictly fresh eggs always command a good price.

Trap-nest records show that hens require from 70 to 90 days to complete moult. During the first third of this period, when merely shedding old feathers, good hens continue to lay, ceasing only when their food is required to supply the materials out of which to fashion the growing feathers. Average layers, properly fed, should not be out of laying due to the moult for a period longer than 50 to 60 days. The older and weaker in vitality the hen, the slower the moult. Generally the hen that drops a few feathers at a time replacing them one by one, is not as good a layer as is the hen whose feathers all seem to drop out at once, leaving her bare for a time. Although the growing of the feathers in the latter case is no negligible drain on a hen's vitality.

It is possible to induce an early moult by selecting a warm period in June, feeding no mash, little if any grain, but the usual supply of green food and water during a period of from three to five days. This checks egg production and causes the rapid shedding of the feathers. This moult, however, is unnatural, and, as a rule, the hens require a longer time for the growing of new feathers than when allowed to moult naturally. Moreover, the poultryman who hopes by this method to bring his old hens into early fall and winter laying is often disappointed by the second moulting of the fowls along in November or December. Forcing the moult is not, therefore, as a rule, advisable.

The ration for the moulting hen should supply protein and ash generously. The supply of tender, juicy green food should be abundant. Oats fed when the shoots are one-fourth inch in length, and milk in the form of cottage cheese, are excellent and safe foods to force feather growth.

The mash should contain ground oats, barley, or corn meal, wheat middlings with some bran. Beef scrap, if milk is not available, should be used to make up about 10 per cent. by weight, of the mash.

The poultry man should specially

**FREE BOOK OF BARN PLANS**

**LOUDEN**

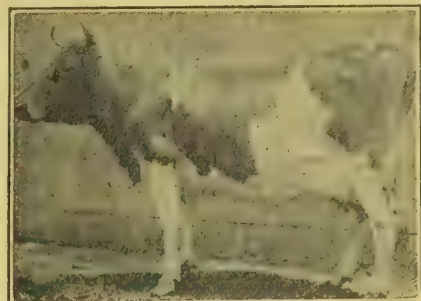
If you are going to build or remodel a barn, you should have this book. Not a catalog.

A beautiful 112-page book on barn construction. Tells how to build a Better Barn Cheaper.

Tell us how many cows, horses and other stock you want to house and it will be sent Free. Write today. Build this fall.

**Louden Barn Equipment** makes barn work pleasure. Ask for free catalogs on Dairy Barn Equipment, Litter and Feed Carriers, Hay Unloading Tools, Horse Stable Fixtures.

**The Louden Machinery Co. (Est. 1867)**  
655 Bruce St. Fairfield, Iowa



### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

#### FISHERBROOK FARM

Box 34, Milltown, Wash.

### Chicona Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

#### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

ALBERT C. HERRE

Route 1 Everson, Wash.

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. GEO. W. HAYTON, Mt. Vernon, Wash. R. 3, Box 73.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

#### HIGHLAND FARM,

Box 56 Underwood, Wash.

guard moulting hens from dampness and drafts, provide sanitary, roomy quarters, feed generously and regularly. The four-pound hen that has laid 150 eggs has manufactured five times her own weight in food for man. It will repay the poultry man to acknowledge the moulting hen's right to new raiment and give her a square deal.

#### BARN PLANS.

The Loudon Machinery Company, of Fairfield, Iowa, has recently published a 112 page book on barn construction in which over 50 different plans are shown. This book was intended for sale at \$1 per copy, but the authors have concluded to send it free of cost to any farmer who intends to build or remodel a barn. The number of cows and horses kept should be stated in the letter when application is made.

#### ASPHALT-BASE OILS BEST LUBRICANTS.

Lieutenant G. S. Bryan, of the Naval Engineering Experiment Station, Annapolis, Maryland, in a paper published in the Journal of the American Society of Naval Engineers recently, says:

"Oils made from asphalt-base crudes

## EGGS and BABY CHICKS

Leghorns, Wyandottes, Minorcas, and Barred Rocks. Day Old Chicks, Leghorns, Brown, White and Buff, at \$15.00 per 100. Choice males offered. EGGS from any of above breeds, \$2 per setting or \$8 per 100. Write for mating list and grit machine circular.

**FRED A. JOHNSON**

518 35th St., Tacoma, Wash.

## EGG LAYERS

Our trapnested S. C. White Leghorns and Barred Rocks do the work. Day-old Chicks and Hatching Eggs. **BLANCHARD POULTRY YARDS** C. WESTERGAARD, Mgr. Hadlock, Wash.

## THE TRAP NESTED WHITE LEGHORNS 10 WEEKS OLD, APR. HATCHED

# PULLETS

Sure Winter Layers. Only a Few Hundred Left  
**THE TANCRED FARMS**  
D. Tancred KENT, WASH.

## ROCKS BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

MRS. D. F. ALWARD

Orting, Wash.

## ANGORA GOATS

Registered heavy shearers, DUROC PIGS. Both sexes. Prices reasonable.

J. Hanks & Sons Ellensburg, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**

Montesano, Wash.

### Register of Merit Jerseys

Young bulls for sale from cows with authenticated yearly records; no females for sale at present.

DAVID C. DILWORTH

Buckeye, Wash.

## GUERNSEY BULLS

A very fine 2-year-old Guernsey sire is offered for sale. He is sired by Melba's May Prince, out of Imported Chartrouse, with advanced registry test of 10,238 lbs. milk and 525 lbs. butter in one year. This is a rare opportunity to get a young Guernsey bull of this class. The price is reasonable considering ancestral records and the excellent quality of the animal. Write for particulars. **AUGUSTINE & KYER,** First St., Seattle, Wash.

have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are the paraffine-base Pennsylvania oils. The carbon formed from the latter is, as a rule, extremely hard and clings to the metal surfaces while that from the former is soft and can easily be wiped off any surface that it is deposited on. This would be expected from a consideration of the nature of the hydrocarbons composing the oil, and it has also been demonstrated in practice.



# Important Announcement to Dairymen



NOW IS THE TIME TO PLACE YOUR ORDER FOR THIS SEASON'S SUPPLY OF

**LARROWE'S**

**DRIED BEET PULP**

TRADE MARK REG. U. S. PAT. OFF.

**BEET**

OWING to the enormously increasing demand we suggest that you place your order with your feed dealer now, for your season's requirements, to avoid possible disappointment.

Those who have used this succulent, milk-producing, vegetable feed and know the certain and profitable results obtained by its use, do not need to be told of its richness in carbohydrates and its general desirability as a ration for dairy cows.

To those who are not using LARROWE'S DRIED BEET PULP we will gladly send evidence of remarkable results obtained by prominent dairymen and feeders, together with valuable suggestions concerning feeding.

## GET 1 TO 5 LBS. MORE MILK FROM EACH COW

If you are feeding an exclusive diet of alfalfa, just try the addition of Larrowe's Dried Beet Pulp and see what a difference it makes. Not only will it increase the milk flow one to five pounds per cow a day—the increase being noticed almost immediately—but it will make your cattle healthy, sleek-coated, bright-eyed and prolong their milking periods.

Larrowe's Dried Beet Pulp is light, bulky, succulent and easily digested; absorbs water very quickly and swells to about six times its original bulk; is cheaper than bran and other mill feeds, yet produces better results.

It is put up in convenient 100-lb. sacks, and may be had either plain or with molasses. Ask your dealer for "Larrowe's."

### WRITE FOR OUR BOOKLET—"PROFITABLE FEEDING"

—containing valuable information on feeds and feeding together with instructions for feeding dried beet pulp. Sent free on request. Address:

**THE LARROWE MILLING COMPANY**  
939 CENTRAL BUILDING LOS ANGELES, CAL.

**The Guernsey Cow**  
is popular among dairymen who appreciate that that

### ECONOMICAL PRODUCTION

richness and fine flavor of products lead to larger profits.

### A GUERNSEY BULL

is a sure way to increase your profits. Grade up your Herd by using a pure bred Guernsey Bull and you will be surprised at the results.

Send for free literature.

**Guernsey Cattle Club**  
Box 20, Peterboro, N. H.

**BLACK LEG** LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkge. Blackleg Pills \$1.00 50-dose pkge. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.



**CHILD'S SO-BOS-SO**  
TRADE MARK

**20% MORE MILK**

From your cows — more work from your horses — if you use this one spray which lives up to its name. Works at once insures Safety, Comfort, Results. Pays for itself in the feed it saves.

**Buy it Now!**

**\$1.25 Per Gallon**

**PORTLAND SPINNING**  
PORTLAND OREGON

Ask for Free Circular No. 51.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

**MRS. D. F. ALWARD,**  
Orting, Wash.

## MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1 Lynden, Wash.

**SILVER BIRCH FARM**  
**BERKSHIRE'S**  
WRITE FOR CATALOGUE  
**CHAS. M. TALMADGE**  
R 1 Box 8 NEWPORT, W.V.

## Holsteins of Pontiac and Hengerveld Dekol Breeding



Our dairy herd is paying well from a working dairy standpoint. We have been careful to select cows and breeding sires with high ancestral records. The surplus stock we offer to sell is all of high quality. Most of our cows are in the A. R. O. class.

We also have a fine crop of calves and some Registered bulls. These bulls and youngsters are all out of King of the Pontiac and Hengerveld de Kol breeding, with A. R. O. dams. The record is high back on both sides. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

There is a growing demand for dairy stock. Buyers are particular about quality. It is a good time to get started right, while the butter market is becoming quite satisfactory.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**



0 H

# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., SEPTEMBER, 1915

No. 9

## FALL SOWING.

During several years past the Horticulturist and Dairyman has been urging upon dairymen and stock raisers the importance of fall sowing in the the Northwest, and we are gratified to realize there will be a much greater acreage of fall sown crops this year than ever before. By means of very thorough preparation of the soil and fall sown vetch and oats, Mr. E. R. Brady of Satsop, was able to put a thirty ton crop per acre into his silo and he could have grown some second crop if he had not pastured. Mr. E. L. Brewer had a large silo crop of fall sown vetch and rye, which was cut in time to grow some second crop this year. Vetch sown with either oats, wheat, rye or speltz during the fall, early or late, depending upon the quality of soil and the location, is ready for harvest in late May or early June when the ground may again be immediately plowed and planted either to corn or to a crop of barley and peas, or to some root crop. Mr. Brady's ground was plowed 4 inches deep, then disked and harrowed, plowed again 10 inches deep and again disked and harrowed a couple of times, thus making a thoroughly pulverized seed bed to a depth of 10 inches. Ground thus prepared and seeded with vetch in connection with one of the standard grains, affords practically double the amount of forage per acre as compared with late spring seeding because the fall sown crop can be put into the silo and the ground prepared for the second crop before the dry weather begins. Besides the vetch serves to increase rather than diminish the fertility of the soil.

On the David Munroe place near Spokane fall sown Jones five wheat was put into the silo in time to keep the milk herd in good flow during the dry season. Relating his experience in the Spokesman Review, Mr. Munroe states:

"We were especially pleased with the results of this feed on the younger animals. They made rapid growth and increased in condition and quality very promptly.

"Corn in our locality to be successful, must have at least one good irrigation. Wheat is also sufficiently matured for silage before the press of harvest work begins and is harvested without purchasing special machine, requiring only the ensilage cutter to fill the silo. Where several silos are to be filled in one neighborhood the threshing engine is available at this time, with the large cutter many silos could easily be filled before the usual time for harvesting wheat.

"Another advantage is that the



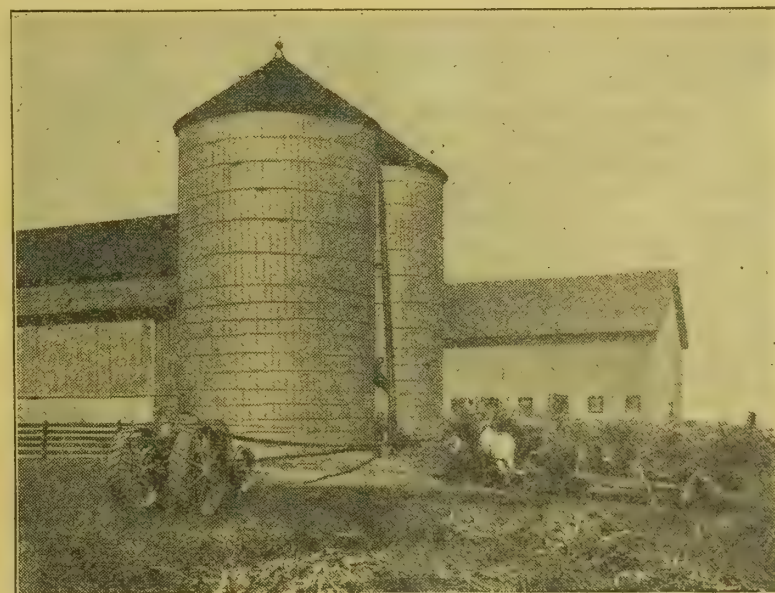
The power tractor is now doing service on many of the farms of the Pacific Coast, thoroughly plowing the soil.

weed seeds are also harvested before they are matured and instead of being a total loss and very damaging to the wheat crop the weeds are made available and are eaten by the cattle. The seeds are thus prevented from germinating as the heat from the silo and the green condition prevents later germination. The land cleared thus early may be plowed at once and sufficient moisture retained to germinate the weed seeds in the soil and thus make a good fallow for wheat to seed again when the rains come.

"The crop taken off at this time is less exhaustive of the soil fertility

than if it was allowed to ripen.

"It is our intention to fill 15 silos next year with wheat. Our observation leads us to believe that this is cheaper than pasturage, and where the manure is carefully saved and applied to the land, we believe a crop can be taken every year from the same land for silage and the fertility of the soil increased. Another very great advantage seems to be that the sections of our state that have been devoted to grain raising quite exclusively may be partly used to feed cattle profitably and a revenue assured, especially if fed to good dairy animals at the same time furnishing succulent feed during



The corn ensilage crop in the middle and the Pacific Coast States is far greater this season than ever before. In the coast section silos are coming into service the year through, beginning with the first crop cut in May or June. (Illustrations Courtesy International Harvester Company.)

the hot season and taking care of the grain injured by bad harvest weather."

## FIXING THE PRICE.

When the Growers Council was organized at Tacoma early this year, the policy to assume control of the fruit product in the membership was embodied as a leading feature, that is the output of the total individual membership was to be subject to certain directing powers for the purpose of marketing similar to a condition of entire ownership under one head.

First, it was necessary to perfect agreements in the shape of contracts with majority of the individual growers for that purpose. Then at fruit picking time it appeared that pears and peaches would glut the market and become immovable. The merchants and the selling agencies alone were unable to make a basis market price that would hold. Here the Growers Council performed a very important work. Having control of the peach crop as though owned by a single individual, they could fix a minimum price and refuse to sell at a less figure. This was done under the leadership of the manager W. H. Paulhamus, by organizing a guarantee fund of \$30,000 to take that part of the crop that could not be sold above 25c per box. In other words hundreds of growers by means of the Growers' Council, acting concertedly, were in position to help fix a basis price. The selling agencies and the merchants welcomed this help and proceeded at once to move the crop even on a rising market. In this one instance the Growers' Council have set a very important precedent; viz.: when they have a large quantity of a given product, in standardized form, then through concerted action they are in position to have the last word as to what the minimum market price shall be. This principle has long been recognized in Denmark and other European countries, and having now been put into practice with fruit growers will also apply to the dairy industry in the Northwest. While having fared better than without the growers Council in net returns even this year, the foundation has been laid for progressive marketing operations according to the policies operating in the older countries in the interest of producers. The work of the growers' council this season is in harmony with the rural system now making rapid headway among producers of the Pacific Northwest. It will not be many years before a majority of producers will be in position to lend material help in connection with merchants to regulate the daily markets.



# NORTHWEST HORTICULTURIST

**Agriculturist and Dairyman.**

**C. A. TONNESON,**  
Editor and Proprietor.

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## INDUSTRY AND BUSINESS LOCALLY.

Co-operative associations correctly  
founded with farmers, do not seek  
to eliminate necessary local mer-  
chants. Organized to sell or to buy in  
quantity the local merchant whose  
place is important for the develop-  
ment of the community, will be given  
first opportunity to serve any well  
regulated co-operative associations.

Some of the farmers in the North-  
west are known to be strong patrons  
of eastern mail order houses, but  
final results generally indicate that  
their local communities are not so  
attractively developed as in places  
where the people are sometimes ac-  
cused of being "clanish."

## QUESTION OF PREPAREDNESS.

Contest and struggle seems to be a  
fundamental of this universe. When  
under evil influences and wrong poli-  
cies struggle among nations breaks  
out into physical force we call it  
war. That is the condition today  
with world-wide suffering. A prom-  
inent question before the United  
States now is—What about prepar-  
edness? Our leading statesmen are  
inclined to adopt a plan which will  
not lead to extremes. They do not  
wish a defenseless, peace-at-any-price  
condition, and neither do they wish  
to place unnecessary military bur-  
dens upon the people. A reasonable  
amount of preparation for defense,  
but a greater preparation for leader-  
ship in the matter of justice to all  
nations is their policy. If this is the  
correct view, the people will quietly  
but persistently support it.

## CHEESE FOR FOREIGN MARKETS.

When local and foreign markets  
are well supplied with condensed  
milk and butter, dairymen will find  
a larger outlet avenue for milk  
product in cheese. The European  
cheese market is rising and its use  
is very general, hence there is going  
to be a wide market. Already some  
leading dairy districts are turning  
their attention to cheese making and  
a most excellent quality is being  
produced. By another six months  
dairymen in the Pacific Northwest  
might attract the foreign cheese  
buyers.

## COUNTY AND STATE FAIRS.

Greater preparations than ever be-  
fore are being made to hold good dis-  
trict and state fairs this year. Most  
of them will have the best of live  
stock, farm and orchard products  
and a complete exhibit of machinery.  
Not only will the exhibits be of a  
high order but the endeavor is for  
serviceable purposes in every one of  
the departments.

No doubt the attendance will be  
greater than ever before and it is  
well worth while for readers who can  
do so to attend some one or more  
of the fairs.

## SELECTING SEED CORN.

This month seed corn is being  
gathered. The early maturing ears  
of good size and form are selected  
by going through the field of corn  
picking into a sack, then string out  
to dry. The selection of seed by  
this method is very important in order  
to get corn that is acclimated  
which will mature early and pro-  
duce a good tonage for the silo, or  
for feeding direct.

Whether the corn is siloed or  
otherwise used, the main object of  
growing corn is to get a good pro-  
portion of grain to the stalk. Be-  
ginners at corn growing frequently  
make much ado about a 15 to 18  
foot corn stock and overlook what  
the ear should be in proportion. A  
crop of corn yielding from 60 to 80  
bushels per acre is of far greater  
feeding value than is a crop yielding  
at the rate of 30 to 40 bushels with  
twice the volume of stalks. Good  
corn silage is only a good crop of  
corn preserved by the silo method.

The humid climate of the Pacific  
Northwest makes it imperative to  
see that any seed corn grown here  
is picked as soon as properly matur-  
ed, when the kernels are becoming  
hard, then hung up out of the reach  
of rodents to become thoroughly dry.

## CROP CONDITIONS SEPTEMBER.

The composite condition of all  
crops of the United States on Sep-  
tember 1, 1915, was 5.5% above their  
ten-year average condition on that  
date, as compared with a condition  
3.9% above average on August 1, in-  
dicating a slight improvement in crop  
prospects during the past month.  
Final yields per acre of crops last  
year were about 2.3% above average.  
This year, however, the total acre-  
age in cultivated crops is slightly  
more than last year.

The total production of important  
products this year compared with  
last year is estimated as follows:  
Corn 111.7%, Wheat 110.1%, Oats  
123.4%, Barley 114.4%, Rye 103.3%,  
Buckwheat 105.9%, White potatoes  
100.0%, Sweet potatoes 114.0% To-  
bacco 108.2%, Flaxseed 112.5%, Rice  
108.3%, Hay (all tame) 115.6%,  
Clover hay 134.6%, Cotton 74.5%,  
Apples 84.6%, Peaches 118.5%, Pears  
91.7%.

## Prices.

The level of prices paid producers  
of the United States for the princi-  
pal crops decreased about 4.6% dur-  
ing August; in the last seven years  
the price level increased 1.7% during  
August. On September 1 the index  
figure of prices was about 6.2% low-  
er than a year ago, 2.8% lower than  
two years ago, and 3.1% lower than  
the average of the last seven years  
on September 1.

The prices of meat animals—hogs,

cattle, sheep, and chickens—to pro-  
ducers of the United States decreas-  
ed 1.4% from July 15 to August 15;  
in the last five prices increased in  
like period 1.3%. On August 15 the  
index figure of prices for these meat  
animals was about 11.7% lower than  
a year ago, 6.5% lower than the two  
years ago and 0.7% lower than the  
average of the last five years on  
August 15.

LEON M. ESTABROOK,  
Sept. 9, 1915. Chief of Bureau.

## WALNUT GROWERS ORGANIZE.

The Western Walnut Association  
has been organized in Portland, with  
J. C. Cooper, president; A. A. Quarn-  
berg, F. A. Wiggins, Fred Groner,  
M. McDonald, Walter F. Burrell and  
Dr. C. H. Chapman are the board of  
managers; H. V. Meades, Orenco,  
Oregon, is secretary.

The object of the organization is  
to promote the walnut industry in-  
cluding its production, standardiza-  
tion and marketing.

## NURSERYMEN'S CONVENTION.

The annual meeting of the nur-  
serymen held in San Francisco in  
August was composed of enthusiastic  
members who thoroughly enjoyed  
the event, from a business stand-  
point, socially and the privileges

afforded by the great exposition.  
Much had been accomplished by the  
traffic committee of which Geo. C.  
Roeding is chairman, on Uniform  
Horticultural laws, M. McDonald,  
chairman and on parcel post regula-  
tion by the California association.  
Efforts along these lines are to be  
continued. The nurserymen will en-  
deavor to supply needed information  
on the nut growing industry and on  
ornamental planting to beautify  
home grounds, during the coming  
year.

The next place of meeting is Med-  
ford, Oregon, S. A. Miller, president,  
Milton, Oregon. The vice-presidents  
and secretary-treasurer were re-  
elected. The executive committee  
is J. B. Pilkington, Portland; John  
Vallance, Oakland, Calif.; and N. S.  
Bennett, Medford, Ore.

Such papers and discussions as  
are of interest to the public will be  
given in our columns from month  
to month.

## WALNUT PRICES ADVANCING.

A recent quotation by W. R. Grace  
& Co., of New York, state that the  
wholesale price for walnuts is ad-  
vancing; from 12c for fancy to above  
16½c for the best grades. Filberts  
stand from 9½c to 12c gross at New  
York. The demand is greater than  
supply.

# THE WALNUT

By Almon Wheeler

All things considered, there is nothing along the line of endeavor in  
horticulture with a more promising future than the walnut.

To the intending planter, whom the bugbear of over production may in-  
cline from the standard fruits which have been and are being planted so  
extensively each year, we suggest that he meditate seriously upon the  
walnut and be convinced that he may expect as good results from his labors  
and as reasonably large financial returns as from any other.

Along the Pacific Coast there is such diversity of soil and climate that it  
is possible to grow all the fruits and nuts of the temperate, many of the  
semi-tropical countries, and perhaps some few of the tropical. This being  
true why should we incline too much to the same thing?

That the walnut has succeeded is proven by the great orchards of the  
South which have been producing profitable crops for many years past and  
according to reports will surpass all records for the state this present sea-  
son. To show how the state authorities at Berkeley regard the walnut we  
quote from their Bulletin No. 231, a book of 400 pages: "The present  
bulletin represents the results of the most extensive, and perhaps the most  
important, investigation undertaken by the department of plant pathology  
since its formation." Then again from the same bulletin: "Under favorable  
and normal conditions walnut growing is one of the most attractive horti-  
cultural pursuits which can be imagined."

The trees require comparatively little care compared with citrus fruits  
and they are subject to comparatively few pests or diseases. The price of  
the crop has been almost invariably good and first class walnuts have always  
sold readily and at excellent prices. The product is not subject to decay,  
freezing, or other dangers which are common to most fruit crops. No un-  
usual skill is required to conduct a well established walnut grove, and all  
in all this crop is, as said above, perhaps the most attractive and the best  
adapted to the average settler coming to California where favorable con-  
ditions for its production obtain.

This paper is not written by one possessed with expert and technical  
knowledge nor one who by close study and investigation is ready to  
announce anything new or startling, but rather by one who has planted the  
young tree, cared for it from infancy to the bearing age, and who, looking  
back, can profit by mistakes and proffer when wanted, a little advice to the  
beginner. Nor will we attempt any lengthy discussion of varieties, root-  
stocks, pruning or the lack of pruning, etc., for you will find as many different  
opinions as there are owners of walnut orchards, but will merely touch  
upon the subject in a general way.

Though walnuts, like many other fruits, may live and grow on indif-  
ferently to a somewhat uncertain maturity in various locations, it is equally  
true that they succeed in some localities and soils better than in others,  
and as we all plant orchards with the expectation of profitable returns, it  
may be taken for granted the intending planter has satisfied himself that he  
has made a wise selection of both and has the necessary moisture conditions,  
either naturally in the soil or to be obtained artificially by irrigation. These  
are the first and vital requisites, and after them comes the selection of  
variety or varieties.

By far the larger number or we might say practically all the orchards  
of the south are of the improved seedling varieties of the English nut.  
These have been and are subject to great loss from the blight, for which  
there is no adequate remedy known to the present time. It is thought by  
many that the late blooming French varieties, grafted on the native Black



root are immune to this, and our experience in Santa Clara County tends strongly to confirm this belief.

This past winter of heavy and continued rains and the cold damp spring have been very favorable to the infection, and in the seedling English trees, though heavily loaded with nuts, the crop will be practically worthless as the proportion of light nuts will be so large that it will be very difficult to interest buyers in such stock.

These conditions are responsible for the slight indication of its appearance in the French, and it follows that the some conditions are responsible for its unusual severity in the seedlings, but they are affected more or less every season and are very uncertain.

Then the late blooming qualities of the French sorts will appeal to the careful planter, starting as they do from April 15 till along the middle of May, according to the locality, escaping the danger from late spring frosts that are often the undoing of the less favored varieties. Another very important feature of the walnut arises from the fact that those on the Black California root can be successfully grown where other trees have died from the oak fungus, and many orchardists are now thus planting, finding it fruitless to replace with the same tree or others subject to the fungus.

As regards bearing, it may be that the seedling will eventually become the larger tree and a heavier bearer, but with the larger nut, superior flavor, light colored shell and kernel and higher market price, the Franquette and Mayette type greatly excels and is the only safe and profitable one to plant in Central California.

If you have heretofore doubted, from ignorance or habitual scepticism, the bearing qualities of the French, assure yourselves from the San Jose Mayette orchard of Mr. Wiltz, the Franquettes of Judge Leib, the George Payne orchard, the home of the famous Santa Rosa tree with a record of 712 pounds of nuts in one year's crop, and even the modest young orchard of the writer at Morgan Hill, and you will see trees with such loads of the finest, largest nuts, that you will all become enthusiastic booster for the walnut.

As for soils, a deep, warm, strong, well drained soil is the ideal, but that they will grow and bear profitably elsewhere is proven by the trees we see in black, heavy adobe and in soils that were once thought adapted for grapes only.

Did you ever see a roadside avenue of walnuts and note the tree opposite the house, where it got the surplus water from the lawn, how much larger, stronger and better filed with nuts it was than the rest? Then plenty of moisture but no hardpan to hold water and rot the roots.

As to overproduction, that spectre that seemingly haunts the citrus man, the prune man and others, the walnut man may not fear for a long time to come, as statistics show that with a steadily increasing consumption only about 30 per cent. of the product is produced in the United States, which means the Pacific Coast and, perhaps we had better say, California. The plantings of walnut trees in past years, though considerable, are insignificant compared with plantings of other fruits, and with such limited plantings it will be foolish to worry about too much of a good thing. When the Franquette and Mayette and kindred varieties are grown in sufficient quantities to be offered in all the markets of the country, such a demand will be created that it will be limited only by our ability to supply and the power of the consumer to buy.

Let us quote from a letter written to us by a man of wide experience and connected with one of the leading fruit industries of the state: "The sack of wanuts (Franquette, 100 pounds) arrived in due time and they have been an absolute revelation to us, being far and away the best walnuts we have ever seen. There is certainly a big future in the walnut industry if such walnuts as these can be produced. We have not known that there were such walnuts."

We may add that this same gentleman has already placed an order with us for 150 pounds of the coming crop for his personal use.

Isn't this creating a market?

## AGRICULTURE The Basis of Prosperity

### LAND SPECULATORS BLOCK SETTLEMENT.

During the last decade the Forest Service has classified as agricultural and opened to public entry more than 15,500 individual scattered tracts of land in the national forests, comprising more than 1,700,000 acres, says an article by the Chief Forester, published in the Year Book of the Department of Agriculture; just issued. Within the last two years, in addition, several large blocks have been eliminated aggregating more than 2,500,000 acres, while nearly 2,000,000 acres more are now under consideration for elimination. All the remaining agricultural land in the national forests is confined chiefly in isolated tracts scattered here and there; to restricted areas requiring irrigation, where water can not be obtained, and to certain river bot-

toms and benches which are not covered with very heavy and valuable timber.

A constant pressure is being brought to bear on the government by private individuals who want to acquire possession of these heavily timbered agricultural lands, single quarter-sections of which often have a value as high as \$20,000 for the timber alone. In spite of the fact that some of these lands have soil suitable for agriculture, to throw them open as homesteads would not result in farm development. This has been proven over and over again where lands of this kind, acquired under the Homestead Law, are today held not by homesteaders but by lumber companies, who promptly purchased them from the settlers as soon as title passed from the government—a speculative process which effectively prevents men of small



Are you troubled by rats and mice gnawing your harness? That's because you've used harness dressing containing animal oils which always attract rodents.

## EUREKA HARNESS OIL

contains no animal oils,—and rodents won't touch harness that's treated with it. Eureka nourishes the leather fibre—keeps your harness soft, pliable and strong. Have your harness man dip your harness in Eureka Harness Oil. Or buy a can and apply it yourself. It's easy—and it pays. Make your harness last longer. Dealers everywhere.

Standard Oil Company (California) Tacoma

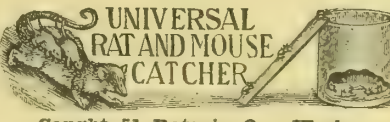
## ENCLOSED FIND CHECK

Merlin, Oregon, Nov. 9, 1914. I received my "ORENCO TREES" today and they are entirely satisfactory. It does me good to receive such remarkable trees; packed in such splendid shape. Enclosed find check for \$231.50. (Signed) H. E. THOMAS. "ORENCO TREES" are known and planted in every State in the Northwest—not because they are the cheapest—but because they are always reliable—always the best. Plant "ORENCO TREES"—always—and have success.

Address OREGON NURSERY CO. Orenco, Oregon Successful Salesmen wanted.

## HUSTLERS WANTED

to sell our complete line of roses, flowering shrubs, shade and ornamental and fruit trees and small berry bearing plants. We teach you how to sell, furnish a complete outfit and pay some weekly. Our representatives are making big money. No experience required. Write at once to Ornamental & Fruit Nursery Co., Box 217 Wapato, Wash.



Caught 51 Rats in One Week

Trap resets itself; 22 inches high; will last for years; can't get out of order; weighs 7 pounds; 12 rats caught one day. Cheese is used, doing away with poisons. The trap does its work and never fails and is always ready for the next rat. When rats and mice pass the device they die. Rats are disease carriers, also cause FIRES. Rat catcher sent prepaid on receipt of \$3. Mouse catcher, 10 inches high, \$1. Money back if not satisfied.

H. D. SWARTS, Inventor and Manufacturer of Universal Rat and Mouse Traps, Box 566, Scranton, Pennsylvania.

## HOW SHADE TREES INCREASE LOT VALUES

"According to a bulletin of the Massachusetts Forestry Association, to determine the value of shade trees on streets, the advice of practical real estate men was sought. A large number of these men were asked this question: 'How much, in your judgment, do full-grown shade trees along the street improve the value of the adjoining land for house lots?'"

"The majority of the answers ranged from 10 to 50 per cent, while some went so far as to state that a house lot would be worth 100 per cent. more if full-grown shade trees were standing in front of it."

"A fair average of these answers falls between 25 and 40 per cent."

"Expert tree appraisers say that a shade tree in good condition and well placed is worth \$1.00 per square inch of cross-section measured at breast height. At that rate a tree one foot in diameter is worth \$113.00, while a tree two feet in diameter is worth \$452.00. For the sake of illustration, suppose that we take a good-sized house lot 50x100 feet, or 5,000 square feet, worth 25c a foot. The land value is \$1,250.00. If the trees are spaced fifty feet apart on the street, there would be one tree in front of the property. The tree is two feet in diameter and worth \$452.00, which would increase the value of the lot 30 per cent."

The above is a news item clipped from a daily paper. It tells its own tale. Our argument for years has been that in no way can property be more quickly enhanced in value than with judiciously planted shade and ornamental stock.

We have as fine an assortment of the staple deciduous shade trees, shrubs, vines, roses, etc., as can be found in any nursery in the West. A line will bring catalog and information. Our salesmen cover almost every field.

Let us hear from you. Good stock. Prompt service.

Washington Nursery Company Toppenish, Washington

## Small Fruit Plants at Wholesale Prices

Blackberries Gooseberries Raspberries Currants Loganberries Dewberries Strawberries Rhubarb Asparagus

Write for Prices. F. H. Burglehaus SUMNER, WASH.

Choice Grades of Shrubs - Plants - Vines - Trees Please let us know your needs early and get a copy of our catalog and prices. BREITHAUP NURSERY CO. C. F. Breithaupt Prop. Kennewick, Wash.

## Nursery Stock

FRUIT TREES SMALL FRUITS ORNAMENTALS

The planter always wants the very best paying results. There is but one way to accomplish this. The right start with our guaranteed whole root, non-irrigated stock in fruit trees, our splendid two-year-old stock in small fruits and our unexcelled selection of ornamentals will do it. Beware of poor stock. Disappointment is the only result therefrom.

Send for our catalogue. Agents wanted. SALEM NURSERY COMPANY F. J. Rupert, Mgr. SALEM OREGON

FARM LANDS—In Central Washington, improved and unimproved. Particulars on application. References. H. B. CARROLL, Ellensburg, Wash.



means from acquiring land and establishing homes.

The government is withholding from agricultural entry all such heavily timbered land until after the timber is cut off. As soon as this is done, the land will be opened to entry and settlers will be able to acquire it directly from the government without cost, instead of having to pay from \$40 to \$60 an acre to land speculators. For example, on the Kaniksu National Forest in Idaho and Washington, the government's timber sales have been made to include much of the remaining timbered agricultural land.

Within eight years fully 10,000 acres will be made available for settlement. Permanent homes will be established by the settlers, and there will be available for the use of communities approximately \$225,000 for roads and schools, their legal share of the proceeds from the timber sales. Private ownership of heavily timbered agricultural land blocks farming development, says the article; government ownership insures such development under conditions that give opportunities to the small settler whose only capital is his strength and courageous perseverance.

One of the most serious agricultural problems of the Northwest today is the development of the logged-off lands in private ownership. In Oregon and Washington alone more than three million acres of such logged-off lands are lying idle, although much of this area has fine agricultural soil and a climate that insures abundant crops and the development of thriving communities. Yet in this same region hundreds of settlers are seeking to find places in the national forests, usually remote from transportation, high in the mountains, where the climate is harsh and the soil relatively poor, simply because the good lands at lower levels outside the forests are held by the speculators at prohibitive prices. The true solution of the problem of agriculture in such sections is to develop the rich logged-off private lands that lie outside the forests, and not to throw open the non-agricultural lands within the forests for the benefit of speculators.

#### SILAGE COMPOSITION AND VALUE.

By R. R. Graves, Head Dairy Dept.,  
O. A. C. Experiment Station,  
Corvallis, Oregon.

Soon after green corn is stored in the silo, fermentation starts and the temperature of the mass rises to a temperature of from 65 degrees F. to

as high as 125 degrees F. The higher temperature is found only near the surface. Where the silage is properly packed and all air is excluded, the temperature rarely goes above 85 degrees F. This is the most favorable temperature for rapid fermentation, which stops the growth of undesirable bacteria. As a result of this fermentation, the sugar in the corn is changed into acids and some alcohol. The acids formed are chiefly lactic and acetic. Lactic acid is found in sour milk and acetic in vinegar. The acetic acid is of a volatile nature, and it is the evaporation of this acid that gives the silage its pungent odor. The production of these acids lasts from two to four weeks.

The chief function of these acids is that of a preservative. The acids prevent the growth of putrefactive bacteria, which would cause the silage to decay. The acid destroying and putrefactive bacteria require the presence of air. Hence, it is necessary to keep air from the silage. Silage that is kept air tight will keep indefinitely. Cases are known where silage has kept in good condition for five and six years. The exclusion of air can be obtained only by packing the silage very tightly in a silo with air tight walls.

#### Legume Silage.

When legumes, such as alfalfa, clover, vetch, and peas, are put into the silo, they should be ensiled with some such crop as corn, rye, or oats. The legumes alone do not contain enough sugar to afford the production of sufficient acid to prevent the high protein content of the legume from decaying. The corn, rye or oats mixed with the legumes, would provide sugar for the production of sufficient acid to preserve both plants.

#### Value of Acids.

These silage acids not only preserve the silage, but probably partly digest the cellulose or fiber of the cell walls, causing the texture of the silage to become softer and rendering it more easily digested by the animal.

The acids of the silage act as an appetizer and a tonic, thus helping to keep the digestive tract healthy. This, together with the succulent nature of the silage, keeps the animal's bowels open and tends to give the animal a glossy coat and a pliant skin, such as the animal has when on good pasture, indicating that it is in the proper condition to make the maximum returns from its feed. In fact, silage lends to our winter ration that indefinable property which causes cattle to be at their best when on good pasture.

## Does He Earn What He Gets? Does He Get What He Earns?

#### THE SPECULATOR EVIL.

What does the speculator earn?  
What does the speculator get?

The speculator gets far more than he earns.

Let us just see how he does it.

The Colt's Pasture Bill as a Labor Lien.

Suppose that Mr. Speculator brings you a colt worth \$50, and asks how much you will charge to care for it for two years.

You say it will be worth \$50 a year—\$100 for the two years. He leaves the colt with you.

Just before the two years are up, Mr. Speculator brings a man to your farm, shows the man his colt, now almost a horse, and sells the colt for \$150. When the two years are up the new owner comes for the colt, puts a halter on him and starts for the gate.

"Wait a bit," you say. "I have

## Kirstin

**Sold on 30 DAYS FREE TRIAL. A ten year guarantee and a share in our profits.**

## One Man Stump Puller

**7 Different Models Light Weight, More Power. Used by the Government, East and West. Get my direct to you Prices.**

## Plant Ornamental Trees

Many farmers are now planting increasingly of ornamental trees and flowering shrubs thus making their homes more beautiful and valuable. Their selections include Hardy Hydrangeas, one of the most attractive fall flowering shrubs, Dogwood, some varieties of which bloom both spring and fall, Japanese Quince, the earliest to flower in spring; Lilacs, Snowballs, Spirea and the various climbing plants to cover old buildings or unsightly objects about the homestead.

We can send many of these by parcel post. Write for our catalog and prices today, for full description of trees and plants.

## YAKIMA & COLUMBIA RIVER NURSERY COMPANY

North Yakima, Wash.

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

## OREGON NURSERY CO. ORENCO, OREGON

## PEAR TREES

Best commercial varieties for Pacific Coast section, choice stock in 1 to 3 years of age and good grades.

Also plum and prune trees of the leading marketable varieties.

English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

**J. W. STEPHENS**  
Kelso, Wash.

## From \$8000 to \$20,000 Per Acre

At maturity of the crop, if you have the correctly formed humus soil and other proper conditions in the North Pacific Coast Section for growing

#### Golden Seal and other Medicinal Plants

My beds extend 4 miles under artificial shade, are 7 years old, and I am booking orders for plants and seeds. Write or make appointment to call.

Reliable information freely given.

## C. E. THORPE

R. F. D. 1, Box 300, SEATTLE, WASH.

For Real Success in Walnut Growing Plant Our

## Pedigreed Walnut Trees

There is no walnut on the market giving better profits to the grower or more all round satisfaction than our

#### VROOMAN STRAIN OF FRANQUETTES

Strong healthy trees, grafted from stock with a record. We also carry the SAN JOSE MAYETTE, another big producer. Write for our price list at once.

#### ELMER BROS. NURSERY

80 South Market Street,

San Jose, Calif.



\$100 coming to me for keeping that colt for two years."

"Well," says the new owner, a Mr. Jones, "well, if you have anything coming to you it must be from Mr. Speculator, for I certainly never asked you to keep the colt, and I have here a bill of sale from Speculator," pulling out a bill of sale.

The bill of sale seems to be all right; but you remember that Mr. Speculator has a bad reputation, and that a labor lien is the best of all titles, better than any deed or any bill of sale.

So, although you are a bit puzzled (as Mr. Speculator and his accomplice, Jones, intended you to be), yet you do the wise thing and refuse to let the colt go till its pasture bill has been paid.

Jones, the new owner, coaxes and storms, frets and swears; but all to no purpose for you refuse to let the colt go till its pasture bill has been paid.

Finally you say to Jones: "Your bill of sale is a matter between you and Mr. Speculator. I hold the colt till my labor lien has been paid."

#### Deed Merely a Bill of Sale.

The United States gave some timber land to a certain railroad company (an even one-third of the entire State of Washington, to be exact). Later, a Mr. "M" became land agent for the railway company. Just how it all came about no one knows, but in the end Mr. "M" held a bill of sale from the railway corporation for billions of feet of choicest timber.

That was the COLT!

Then you and I and all the millions of people in Washington, North Dakota, South Dakota, Minnesota, Wyoming, Nebraska and Kansas (including stockholders in the railway company) MADE THAT TIMBER VALUABLE.

Mr. "M" did practically nothing at all.

We cared for the COLT TILL IT BECAME A HORSE.

The timber, of course, belongs to Mr. Speculator; but we must be paid our labor lien for making it valuable.

Of course if Mr. "M" has sprayed his forests, or pruned them, or cultivated them, or done anything else to make them valuable, then the forests are his "crop" in the same sense that our grain and potatoes are our crops.

If Mr. "M", his heirs or those to whom he sold timber lands get values created by us, then we fail to get what we have earned.

A hand-planted forest, like an apple orchard, is private property.

A natural forest is public property.

A deed is not a clear title; it is merely a guarantee of a clear title at the time of sale.

A homesteader has his deed direct from the government, yet he cannot prevent the collection of a labor lien by the man who adds value to his land by clearing it, by ditching it, by improving it in any way.

A speculator pre-empts land, paying \$2.50 per acre. A city springs up and grows out toward this wild land. The speculator lays out lots (ten to the acre; that is 25 cents each according to the original price). If the lots get to be worth \$100 each, or \$100,000 each as often happens, THEN SURELY THIS VALUE BELONGS TO THOSE WHO CAUSE ITS PRODUCTION.

Nothing could be simpler.

Nothing could be plainer.

Values belong to him who produces

them; not to some idle parasite.

Lots on Second Avenue, Seattle, are worth \$150,000 each.

Your father and my father (the government of a generation ago) sold that land to Mr. Speculator for 25 cents a lot—maybe for less than that.

You and I are making the present value (it is re-made every day—vanishes altogether if all of US leave the state!)

We have cared for the colt until it became a horse.

Mr. Speculator gave a bill of sale (a deed) to Jones; and now Jones wants us to pay him 7 per cent, interest ON WHAT HE OWES US!

It would be to laugh, if it were not so serious!

On the railroad's grant were coal mines. When there were no people nearby the mines were worthless. If we should all go away and no one come to take our places the mines would be worthless again.

Plainly we, the people, cause all these values.

Yet the artificial person, the railroad company, wants us to pay IT for the value we have added to those coal mines!

Their lawyers claim that if we do not pay we will be "confiscating" property!

Jones might, as well claim that if the farmer did not let him have the colt free from the pasture bill, THEN THE FARMER WOULD BE CONFISCATING THE COLT.

#### Tide Lands.

M. Speculator buys some tide lands from the State.

You own a dredging machine. He hires you to put in a bulkhead and fill in the tide lots for a factory site.

Then Mr. Speculator sells to a manufacturer, after the latter has examined the abstract and found the title clear.

YOUR LABOR BILL HAS NOT YET GOT ON THE ABSTRACT.

So you come to Mr. Speculator with your bill for \$5,000.

Mr. Speculator sends you to Mr. Manufacturer, who refuses to pay.

You present your claim as a labor lien, secure judgment AGAINST THE TIDE LANDS!

Mr. Speculator and Mr. Manufacturer may both remain away from court.

That makes no difference.

You secure judgment and get your money.

ALL COMMUNITY-MADE VALUES OF ALL NATURAL RESOURCES BELONG TO THE COMMUNITY.

Community-made values are a labor lien held by the community against all natural resources which have been made valuable by the growth, developments and needs of the community.

In the United States, every year, speculators get \$6,000,000,000, which they have not earned.

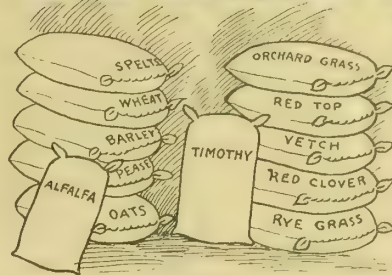
In the United States every year the people make or cause increased values to the extent of \$6,000,000,000, which they do not get, simply because they fail to bring action to collect their just labor lien.

But even this vast sum of \$6,000,000,000 a year is, relatively, one of the smallest evils arising from speculation.

In the next issue I will call attention to some of the larger evils.

W. H. KAUFMAN,  
Bellingham, Wash.

# Seattle Seed Co.



WESTERN AVE., SEATTLE, WN.

ADEQUATE SUPPLY

PROMPT SERVICE

for any

Seed Orders and Poultry Supplies.

Quality Guaranteed.

Fall Seeding is advisable. Send for catalog.

## FOR FALL PLANTING

# BULBS, ROSES, TREES

### 64 page Autumn Catalog

listing the most profitable and satisfactory varieties for commercial and home plantings  
Write now. Ask for Catalog No. 51

**Strawberries  
Rhubarb  
Asparagus**  
for fall planting  
give sure and quick  
returns and can be  
made to pay big profits.

Order early. Your inquiries will have prompt attention. It pays you to have your order on file when the shipping season begins.

**Our Trees and Plants**  
are grown in Oregon  
Sturdy, healthy stock with  
heavy, fibrous roots. Dug

and packed as ordered. Bearing  
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**PORTLAND SEED  
COMPANY**  
PORTLAND, OREGON



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## Mitchell Ladders

On account of overstock we are making a reduction in prices of our Mitchell Ladders. If you will need a ladder now or next year

### Buy Now and Save Money

Apply at the nearest Mitchell dealer or mail in this coupon:



Portland, Oregon

Send me special prices on your Mitchell Ladders.

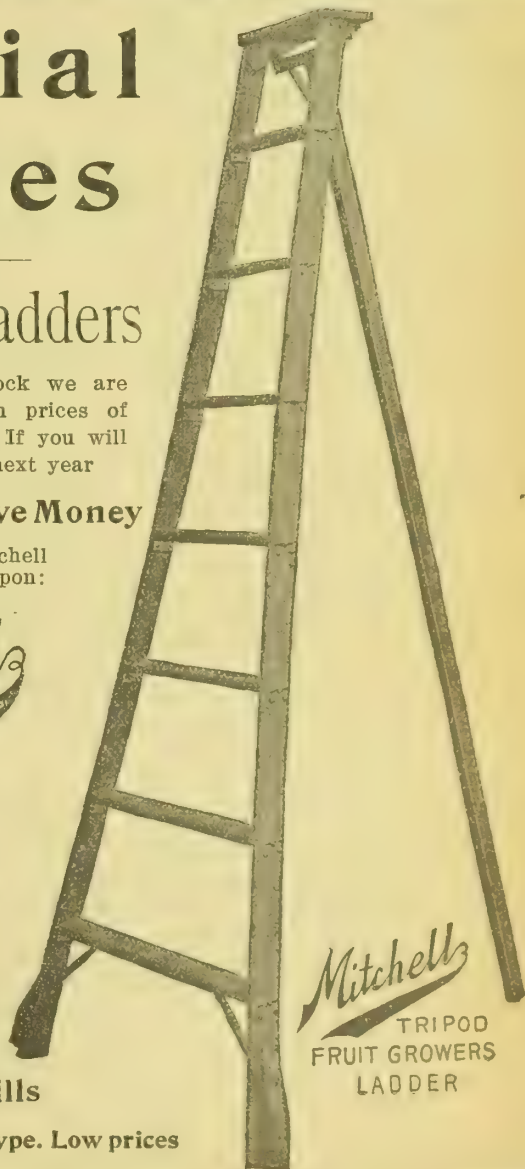
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Cider Mills

Four sizes of the best type. Low prices



**Mitchell**  
TRIPOD  
FRUIT GROWERS  
LADDER



### CEMENT DRAIN TILE IN ALKALI SOILS.

With the expenditure of several millions of dollars annually in the drainage of irrigated lands in the west, irrigating engineers, drainage engineers, and farmers will be interested in a recent publication, Technologic Paper No. 44, issued by the Bureau of Standards, Department of Commerce, giving the results of the first year's tests of the durability of cement drain tile in alkali soils, which is part of a general investigation of the durability of concrete exposed in concentrated alkali soils.

Drain tile manufactured in a manner as described for cement mixtures not leaner than 1 part cement to 3 parts of aggregate are apparently unaffected structurally when exposed for one year in operating drainings in very concentrated alkali soils.

Drain tile made from cement mixtures leaner than 1 part cement to 3 parts of aggregate should not be used in localities where character of the alkali and concentration is similar to that found at the site of the experimental drains at Grand Junction, Colo., Montrose, Colo., and Garland, Wyo.

Drain tile manufactured of 1 part cement to 4 parts of aggregate, is apparently unaffected structurally by exposure for one year in an operating drain in concentrated alkali soils similar to those found at Fort Shaw, Mont., Sunnyside Washington, Yuma, Arizona, and Roswell, N. M.

### NORTHERN PACIFIC RAILWAY REPRESENTED AT SPOKANE FAIR.

The Northern Pacific Railway has arranged with the Spokane Interstate Fair and Live Stock Show Association to have its Development Agent Prof. D. E. Willard, lecture at the Fair. He, with five other prominent lecturers and instructors, will speak each day of the Fair on the care and feeding of dairy cows, growing of beef cattle for profit, the most profitable breeds of farm animals and breeding of herds, the feeding of calves, hog raising, horse raising, farm foods, silos and silage, the standardization of dairy products, and the marketing of farm products.

These men will also, each day, judge cattle, and practical work will be done in the show ring near the stock barns where the lectures will be held. The demonstration work will be done with the cattle, sheep, hogs and horses brought to the Fair for exhibition by the various farmers.

### PLOWING SMALL-GRAIN STUBBLE.

The average yields of spring crops, such as wheat, oats and corn in the Great Plains area, from spring and from fall plowing, show that the blind following of a rule prescribing any particular time of plowing might cause a reduction as often as it does an increase in the yields. However, in this region, where the precipitation is erratic, there are very few farming operations which can be done successfully by rule of thumb, and this is especially true of any rule for time, depth and method of plowing. The time of plowing is one of the most frequently discussed subjects, and one on which very few authoritative figures can be obtained. Yet the time of plowing is one of the most important of the controllable factors in crop production.

The great variation in the time and amount of precipitation in this region must be constantly kept in

mind, when considering the time of plowing.

Stubble, weeds and uneven ground are common means of retaining snow and holding a large part of the winter precipitation. In deciding when a field should be plowed, the question of whether a greater amount of moisture will be accumulated by holding the snow that falls than will be dissipated by the growth of weeds is paramount. It must be decided by the man on the ground. In answering this question several factors must be considered, namely, the amount of moisture already in the soil that may be lost through weed growth, the probable time before the weeds will be killed by frost, the possibilities of increasing the water in storage in the soil by holding the snow that may come, the danger of soil blowing if the stubble and weeds are removed, and the distribution of farm labor. The importance of these factors is considered in the new U. S. Department of Agriculture Bulletin No. 253, "The Effect of Different Times of Plowing Small-grain Stubble."

The time and method of cultivation, should be planned to prevent weed growth, and still leave the soil or stubble in such a condition that it will hold the maximum snow. However, the period when labor is available will also be an important factor in determining the time of plowing. When labor is scarce, cultivation other than plowing which will kill weeds, and can be done rapidly, may be resorted to. If this cultivation leaves the stubble on the surface or leaves the surface rough enough to hold the snow, it may be of even greater value than plowing. Disking and listing in the fall are the methods most commonly used.

Heavy rains in August indicate that fall plowing should be done, as the gain of moisture during the winter by the stubble land probably would not equal the loss of moisture taken by the weeds in the fall. If only light rains occur, however, the moisture in the soil produced by these rains probably would be more than offset by the greater quantity of snow held by the stubble during the winter, and the reduction of the weeds in the crop. Spring plowing would then be better.

The only advantage in late fall plowing is that the amount of spring labor in preparing the seed bed is reduced. This advantage, however, may be offset by reduction in the yield.

In deciding when a field should be plowed, the question of whether a greater amount of water will be accumulated from snow than will be taken up by weeds is the greatest question to be decided, and this must be done by the man on the ground.

### THIRD TRACTOR DEMONSTRATION.

By George F. Whitsett, of the International Harvester Company of America.

The question mark which the farmer originally placed before oil-burning tractors is growing dim. The tractor for all farm work is now a reality, and many farmers are buying tractors with which to equip their farms with power.

This sums up the most elemental

# WASHINGTON STATE FAIR

**NORTH YAKIMA, Sept. 20-25, 1915**

**TWENTY THOUSAND DOLLARS IN PREMIUMS AND PURSES.**

Splendid exhibits of all kinds, races, band concerts, free and paid attractions and other amusements.

A whole week of pleasure and profit.

Come and enjoy yourselves.

Reduced rates on all lines. For premium list and information address

**FRANK MEREDITH, SECY.**  
**NORTH YAKIMA**

## 10 Days Free Trial *Charges Prepaid* *Send No Money* **NEW KEROSENE LIGHT** **Beats Electric or Gasoline**

**TWICE THE LIGHT HALF THE OIL**



We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days—we even prepay transportation charges. You may return it at our expense if not perfectly satisfied after putting it to every possible test for 10 nights. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 33 leading Universities and Government Bureau of Standards show it

**Burns 50 Hours on One Gallon**

common coal oil, and gives more than twice as much light as the best round wick open flame lamps. No odor, smoke or noise, simple, clean, no pressure, won't explode. Several million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed,

**Awarded GOLD MEDAL at World's Exposition San Francisco**

**\$1000 Will Be Given**

to the person who shows us an oil lamp equal to the new Aladdin (details of offer given in our circular.) Would we dare make such a challenge if there were the slightest doubts as to merits of the Aladdin? We want one user in each locality to whom we can refer customers. Be the first and get our special introductory offer under which you get your own lamp free for showing it to a few neighbors and sending in their orders. Write quick for **10-Day Absolutely Free Trial**. Just say, "Show me how I can get a strong white light from kerosene oil, without risking a cent." Address our nearest office.

**MANTLE LAMP COMPANY, 97 Aladdin Building**  
Largest Kerosene (Coal Oil) Mantle Lamp House in the World  
**PORTLAND, ORE. CHICAGO, ILL. NEW YORK CITY MONTREAL or WINNIPEG, CAN.**

**Men Make \$50 to \$300.00 Per Month With Rigs or Autos**

delivering the ALADDIN on our easy trial plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 37 lamps out of 31 calls." Thousands who are coining money endorse the Aladdin just as strongly.

**NO MONEY Required** We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory. Sample sent for 10 days **FREE TRIAL**.

# ALFALFA HAY

FROM GROWER DIRECT TO USER

This hay is grown on our farm at Mabton, Wash., and is cut and cured so as to secure the highest feeding value.

First class alfalfa hay is scarce this year because of rains at time of harvesting, and because of the planting of large alfalfa acreage to wheat and other crops this season. Therefore we advise our customers to order early.

We can also furnish Straight Timothy Hay, and Timothy mixed with Alfalfa or Clover.

Write us for prices

**Karr Investment Co.**  
NORTH YAKIMA, WASH.



tractor lesson taught at Fremont, Neb., by the Third Annual National Power Farming Demonstration, which came to a close August 14th. Three years ago, when the national demonstration was originated at Fremont, the farmers came to see the tractors out of curiosity. Last year they looked with more interest than wonder, and this year the orders for machines were many.

The great majority of the sales were of the little tractors suited to the small farm, and with the power to pull two or three bottoms, or a disk harrow and a peg-tooth, or one binder or two mowers, or a manure spreader, or to run an ensilage cutter, a shredder, or a small thresher. It was the owners of small farms who bought most of the tractors at Fremont, and who will buy the most tractors today and tomorrow. This is because there are more small farms than large ones, and a tractor has now been developed which is admirably suited to the small farm with its large number of jobs demanding power.

The manufacturers are learning something from such demonstrations as that held at Fremont. They are learning that it is not enough to make a small tractor and ask a small price for it. Some assurance must be given the farmer that he can get some service along with his tractor, and that he will not find himself in a worse power dilemma than ever when, upon a breakdown in the busiest season, he finds that he has to wait an indeterminate period to get a repair part. The farmer wants to know that there are plenty of dealers with repairs right in his home territory where he can get emergency help quickly when he wants it. He also demands that there be plenty of the employees of the company selling the tractor in his locality, so that he can get expert assistance in case he has initial trouble in learning the cardinal principles of tractor operation.

There have been more than one hundred manufacturers in this country who have undertaken to build farm tractors. Many of them have supplied examples for the successful manufacturers to avoid, and there are now few companies compared to the number starting in the business who are offering oil-burning tractors to the farmers. These are learning that they cannot mount a kerosene engine on three or four wheels, charge an insignificant price for it, and make a business success. The wise farmer measures the depth of the furrow, looks for complicated mechanisms which will get out of fix, wonders if the company is going to be in exist-

ence next year to sell him repairs, calculates the time it will take to ship repairs from the sales point nearest the farm, and does a lot more figuring that means trouble for the freak manufacturer who counts on building up a big business on a little merit. The farmer is in a tractor buying mood because he believes there are some companies which understand he is more concerned with quality than with price, and that he wants to buy service as well as tractor when he writes his check.

#### WASHINGTON STATE FAIR.

By J. C. Allison.

The 19th annual Washington State Fair, to be held at North Yakima, September 20 to 25, as a successful event, were never so promising. The secretary recently reported that space reservations in all departments are fast being made, and that the different exhibitions will exceed by far those of former years.

An especially generous premium list, coupled with large purses in the racing events have assured hearty responses from the racing men, and from horticultural, livestock and agricultural exhibitors. A qualified corps of superintendents in the various departments of this state institution, appointed solely for their ability, have been at work since early summer organizing the 1915 exhibition. In none of the numerous divisions has anything but a flattering report been made. Some even go so far as to state that it will be the BIG SHOW in the northwest.

The agricultural and horticultural departments, especially are expected to excel anything that the state has attempted along these lines. Each are under most excellent supervision this year, and the exhibits that will be entered will be comprehensive and representative of the entire Evergreen State.

In view of reports that come early from some sections, stating that this will be an "off year" in some lines of horticulture, unusual efforts were early directed toward securing exhibits, with very pleasing results.

A systematic canvass was first started by the Superintendent of Horticultural and Agricultural exhibits, in Yakima county—the home of the fair—to secure district exhibits. Nineteen out of 20 districts visited in the county have taken space for their products, and have active committees of farmers and business men at work collecting grains, grasses, fruits and other products of the soil for the exhibit booths.

Similar efforts are being put forth

# Fall Sowing

## Tested Seeds—

Grasses, Clovers, Alfalfa

Vetches, Grain and

Special Mixtures for

Special Purposes

Write for Prices and Samples. Get the Best—Don't Take Chances on Inferior Seed. Dealers Sell Lilly's Seeds.

THE CHAS. H. LILLY CO., Seattle



## ELECTRIC LIGHTING

While a luxury in the farm home and in the barns it is within the reach of many farmer readers of this paper. In fact, quite a number of farm houses in the Pacific Northwest are now equipped with a good electric light system and would not think of being without the convenience which it affords.

In some cases power is generated from a stream, others not within reach of some established power plant, the power is developed by means of small gasoline engines, which also do other stationary duties, and the stored electricity is developed at very small cost. Would you like to know about the cost for lighting certain buildings then please write giving full particulars about your place with reference to lighting requirements.



CHANDLER-DUNLAP CO.

73 Columbia St.

Seattle, Wash.

## Fall Seeding Affords Satisfaction

Send your proposed seed order for any kind of grass seed of the highest standard purity and germinating quality for fall sowing. Prompt shipment and satisfaction guaranteed.

Gasoline Engines for every farm purpose.

Poole's Seed and Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

## Ornamental Plants Shrubs and Trees

Send for our illustrated catalog and price list of roses, flowering shrubs, shade ornamentals and fruit trees. We carry a complete line and can fill your order promptly. Our fruit trees cannot be surpassed, nor the price equalled.

Order now. Fall is the best time to plant.

ORNAMENTAL FRUIT & NURSERY CO.  
Wapato, Wash.



Types of Dairy Stock exhibited at The Washington State Fair.



in the matter of county displays, and they are meeting with remarkable success. The State Fair has arranged to pay the freight on all county exhibits, besides offering handsome cash premiums to county and individual exhibitors. A ruling by the Fair management which will meet with statewide approval is the one by which Yakima county is excluded from competing against other sections of the state, thus guaranteeing an equal opportunity to exhibitors in all parts of the state.

Splendid interest is likewise being manifested in the Livestock, Dairy and Poultry departments, and it is firmly believed that these divisions will be generously represented. Stock raising and Dairying have materially increased in Washington during the past year, and the State Fair is undertaking to reflect the progress that has been made. Everything possible is being done to interest the Livestock breeders in the Fair this year, and many new exhibitors will be in the ranks when the fair opens on Monday morning, September 20th.

Six thousand dollars are being spent in improvements on the buildings and grounds. The Agricultural building has been completely remodeled inside at a cost of approximately \$2000. A balcony has been added to take care of the added exhibits which will be made this year.

A new stock show barn, to replace an obsolete structure recently destroyed by fire is being erected. This building is the last word in stock show barn construction. Four rows of stalls will care for 200 head of stock. Three other barns of similar construction supplement the stock show facilities.

The Washington State fairgrounds contain 120 fertile acres, ideally located. The state boasts the finest mile racetrack in the Northwest. Records have been established on it, and in the horseman's estimation it holds a favorite place.

Plenty of shade trees, stretches of green pasture, copious display buildings, ample grandstand facilities and a pleasing environment characterize the State Fairgrounds. Since the first of the present year, these have been under the direction of C. F. Homeyer, who for a number of years before assuming charge of the Washington state buildings and grounds, occupied a similar position with the State Fair at Salem, Ore. The new superintendent has worked a transformation in the grounds in preparation for the coming fair, since his arrival at North Yakima. Running streams of water, in additions to city water piped throughout the grounds have served to make the grounds a beauty spot.

Requests for premium lists are being received by Secretary Frank Meredith every day. Keen competition is expected in all departments this year, including the Textile, Art, Culinary, Poultry, Manufacturers, and Children's Industrial.

The entertainment features will be varied and plentiful, and efforts are being directed by the secretary toward securing only those of high order. Many free amusements will be offered which have hitherto been unknown in this part of the country.

Admirable camping sites will be provided for visitors coming from far and near, and a strong appeal is being made to automobilists in all parts of the state to come to the State Fair in their machines, where

# Seeds

## THE KIND THAT GROW

"You Can't Keep Them in the Ground"

### SEND FOR CATALOGUE

188 Front Street

PORTLAND, OREGON

# J. J. Butzer

ASK FOR PRICES FOR FALL SEEDS

free parking spaces will be provided for them within the grounds.

#### MOTORISTS KNOWLEDGE OF LUBRICATION.

"A consideration of the properties of cylinder oils, and an analysis of the conditions under which they lubricate, lead us to the belief that a large majority of the complaints about cylinder oils can be accounted for as due to ignorance regarding the principles governing their use." So says Lieutenant G. S. Bryan, of the Naval Engineering Experiment Station, Annapolis, Maryland. Continuing, his article in the Journal of the American Society of Naval Engineers for February, says:

"The three essential requirements of a good motor cylinder oil are: First, it must lubricate the piston efficiently at the temperatures encountered in the cylinder. Second, it must give a good seal to the piston and rings, keeping them tight and preventing leakage of the oil and condensed gasoline past them. Third, it must burn without forming carbon deposits in the cylinder when an excess of the oil gets into the combustion space.

"We have seen that with the water boiling in the jackets the temperature

#### Making Alfalfa Meal from Alfalfa Hay in the Field



#### The Williams Patent Portable Alfalfa Mill with Sack Packer

Can be driven with steam, oil or electricity. Three sizes. One, two and three tons. Don't Haul Hay—HAUL THE MEAL. Ask for Bulletin 175. Address **OLIVER J. WILLIAMS, 260 Market St., San Francisco, Calif.**

## PORTLAND WHOLESALE NURSERY COMPANY

Rooms 6 and 7, 122 1/2 Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

#### SPECIALTIES

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.



The Western Washington Fair, in a class by itself, is virtually a cleaning house for sellers and buyers of all kinds of produce, pure-bred live stock and machinery. Dates September 28 to October 3rd. Write at once for Premium List.

J. P. NEVINS, Secretary.

W. H. PAULHAMUS, President.

Puyallup, Wash



of the inner surface of the cylinder walls will be about 267 degrees F. The temperature of the layer of oil that is in immediate contact with the cylinder walls, which is the part that regulates the friction, cannot be much higher than this. I do not know of any motor oils that have a flash point lower than 325 degrees F. If the temperature of the cylinder walls gets up as high as this in a water-cooled motor there is something radically wrong, and the remedy is not to get another oil of higher flash point, but to locate the trouble and remove it.

#### MINERAL PRODUCTION IN ALASKA.

Alaska produced gold in 1914 to the value of \$15,764,259, an increase of about \$140,000 over that of the previous year. In 1914 21,450,628 pounds of copper were produced in Alaska, compared with 21,659,958 pounds in 1913. The value of Alaska's total mineral production for 1914 is \$19,118,080; that of 1913 was \$19,476,356. This decrease is due to the low price of copper in 1913. It is estimated that up to the close of 1914 Alaska has produced minerals to a total value of \$268,150,000, of which \$244,156,000 represents the value of the gold output. These statistics are taken from a report by Alfred H. Brooks, of the United States Geological Survey, which is now in press.

#### DRAIN TILE.

Drain tile ranked sixth among the brick and tile products in value in 1914. The output was valued at \$8,522,039, or 6.58 per cent. of the total in that year, a decrease of \$36,281 from 1913. The Middle West is the great producing region for this product (though it was reported from 36 States in 1914), Ohio, Indiana, Michigan, Illinois and Iowa reporting over 88 per cent. of the total in 1914. Iowa ranks first, reporting drain tile to the value of \$3,180,836 in 1914, an increase of \$382,020 over 1913. Ohio was second, with \$1,589,565 worth in 1914, an increase of \$81,001 over 1913. Indiana was third in 1914, with \$1,332,002, a decrease of \$263,288 from 1913.

#### SOUTHWEST WASHINGTON FAIR.

The Southwest Washington Fair, which closed at Chehalis August 28th, was the largest and best demonstration of agricultural, poultry and live stock products in its history. Particularly were the grains and grasses under the supervision of F. A. Degeler attractive, and is an eye-opener to the farmers of this section as to opportunities which afford in the raising of seed. This year prices of all kinds of grass seeds are extremely high. There ought to be carloads of vetch seed, red top, the bromes and rye grass seed produced in Southwestern Washington. The fair has demonstrated that high quality of these grasses are produced. A little enterprise will soon put this part of the Coast section in the prominent ranks of seed growing, and to that end the agricultural exhibit at this fair will have served a valuable purpose.

The poultry exhibit was excellent, under the supervision of Harry Collier, in the new poultry building.

The farmers are gradually improving their live stock operations. The fairs held here for the past seven years have had a good influence demonstrating the value of fixed types in cattle and swine. In the future there will be more definite

capacity for production to afford a satisfactory profit margin over cost of production.

Secretary Walker and his co-workers have done well with this year's event.

#### DRUG PLANTS.

Farmers' Bulletin 663, "Drug Plants Under Cultivation," by the Department of Agriculture, states that in order to have the cultivation of drug plants financially successful in this country, the introduction of improved methods and the use of machinery is probably necessary. Prospective growers are urged to acquaint themselves with market conditions before investing any considerable sum of money. Among plants successfully cultivated are: Anise, Belladonna, Burdock, Caraway, Catnip, Camomile, Conium, Coriander, Digitalis, Dill, Echinacea, Elecampane, Fennel, Ginseng, Golden Seal, Henbane, Horehound, Pennyroyal, Sage, Stammonium, Tansy, Thyme.

#### PRICES FOR FARM PRODUCTS.

The level of prices paid producers of the United States for the principal crops decreased about 0.1 per cent. during July; in the past seven years the price level decreased about 0.1 per cent. during July. On August 1 the index figure of prices was about 0.9 per cent. higher than a year ago, 10.8 per cent. higher than two years ago, and 0.2 per cent. lower than the average of the past seven years on August 1.

The prices of meat animals—hogs, cattle, sheep, and chickens—to producers of the United States decreased 0.3 per cent. from June 15 to July 15; in the past five years prices increased in like period 0.3 per cent. On July 15 the index figure of prices for these meat animals was about 7.8 per cent. lower than a year ago, 5.8 per cent. lower than two years ago, but 1.9 per cent. higher than the average of the past five years on July 15.

LEON M. ESTABROOK,  
Chief of Bureau.

#### MEATS IN AMERICAN TRADE.

Imports of meat and dairy products into the United States in the ten months preceding May 1st last were three times the value of those for a like period two years ago and seven times those of the entire fiscal year 1905. This movement, according to the records of the Bureau of Foreign and Domestic Commerce, Department of Commerce, first assumed large proportions in the fiscal year 1914, following the transfer of meats to the free list. Very recent months, however, have reversed the upward trend, since February, March, and April show much smaller imports than in those months of last year or when compared with earlier months of the current fiscal year.

It is also apparent that the United States pays less for the meats which it buys than it receives for those it sells. In April we imported 8½ million pounds of fresh beef valued at 9¼ cents per pound f. o. b. countries of origin. In the same month we exported 25½ million pounds valued at 14 cents per pound at the domestic ports of shipment. For the ten months ending with April, 1915, the imports and exports were 165 million and 102 million pounds, respectively, valued at 9¼ cents per pound for the imports and 12½ cents per pound for the exports.

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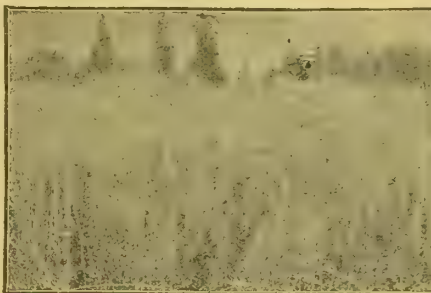
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Look at the pictures below! It shows what YOU can do by spreading the manure now going to waste on your farm. WRITE TODAY—AT ONCE—FOR PARTICULARS ON THIS EXTRAORDINARY OFFER.

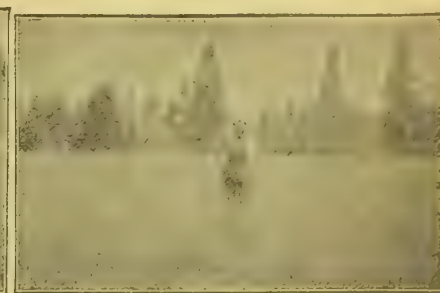
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A LITCHFIELD CROP  
Actual photograph taken on farm of P. B. Marshall, Albany, Oregon, showing two fields—one where a



NO LITCHFIELD—NO CROP  
Litchfield Manure Spreader was used, and one without.

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MIXTURES FOR PERMANENT HAY CROPS AND PASTURES

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NOTE THEIR PURITY AND WEIGHT

Or send in your order direct. We guarantee full value  
for the money sent and will give your inquiries our  
prompt and careful attention.

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**Portland Seed Co.**

PORTLAND, OREGON



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Thanks to our many Patrons  
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Please mention this paper when writing to our advertisers.



## IRRIGATION

Adequate, available moisture  
at all seasons.

### HOGGING DOWN IRRIGATED CROPS.

Pasturing hogs on alfalfa and hogging corn are coming very much into favor. The results of experiments conducted on the government farm indicate that this is a decidedly profitable way of marketing alfalfa and corn under conditions similar to those which prevail on the Belle Fourche project. The small amount of labor involved is an important factor, and another consideration is the fact that less fertility is removed from the soil than when the crops themselves are sold.

In one experiment conducted on the farm hogs were kept on alfalfa pasture at the rate of 1815 pounds of live weight to the acre and given in addition a ration of 2 pounds of shelled corn for each 100 pounds of live weight. They were kept on the alfalfa 121 days, gaining in the course of this time 457.5 pounds. They were sold at Newell, (S. Dak.), for 7 cents a pound, corn costing at the same place \$1.70 per 100 pounds. Taking these prices as a basis the net return per acre from the hogs was \$41.44. At the average yield of alfalfa hay per acre this means that the hogs paid \$11.23 per ton for the alfalfa they consumed. The local market price of alfalfa hay was only \$4.50 per ton.

The experiment was continued by turning 4 hogs from the alfalfa on September 22 into corn and leaving them there until all the corn was consumed. This required 20 days, during which period the hogs made a total gain of 145.5 pounds. At 7 cents a pound this worked out as \$40.72 per acre for the corn or 1.17 per bushel.

### OVERHEAD IRRIGATION SYSTEMS.

The overhead irrigation systems are becoming more popular every year in communities where tried out. This method is particularly serviceable for the raising of all truck crops, small fruits and root crops. In many cases, half the area of a given tract with overhead sprinklers have produced greater crops compared with that tract without sprinklers.

One farmer in an eastern state, giving his experience in the Fruitman and Gardener, states:

I have a forty foot well, and a Myers bulldozer force pump costing \$80 run by a 4-horse power engine. The piping costs as a rule about \$125 per acre. I put my nozzle lines about 3½ high using ¾ inch pipe set in concrete placed in a hole 3½ x 14 deep. The hole was dug with a special prepared digger. I remove the lines in the fall, but usually nozzle lines are permanently constructed.

According to the experience of another farmer:

Since putting in our plant there has not been a season but what we have doubled the yield on many of our crops, while in some instances we have trebled it and in others have saved the crop from total loss.

We grow strawberries and vegetables exclusively on our irrigated land. Lettuce, potatoes, onions, cabbage, carrots celery, beets radishes,

leek and parsley are among our leading crops.

In 1912 our irrigated potatoes yielded 993 baskets (341 bushels) on one acre of ground. This land was measured by a representative from the State Experimental Station, who also supervised the harvesting and weighing of the crop. The potatoes adjoining this field, which were not artificially watered, only yielded about one-third of the above amount.

Last year our irrigated strawberries gave us the magnificent yield of 8500 boxes per acre, while those adjoining yielded less than one-half of that amount.

#### Irrigation Suggestions

The Montana Station suggests that irrigation water intelligently used is one of the most valuable resources in the State. Improperly used, it is very harmful. Exercise care in its use and irrigate the greatest possible land with the water available. Avoid the difficulties arising from overirrigation.

Save the rainfall—Early spring cultivation of plowed fields and harrowing or disking immediately behind the plow in the case of spring plowing holds the water for use by the crop. Do not let the fields dry out before spring planting. Potatoes, corn, sugar beets, etc., should be cultivated as soon as they come up and kept cultivated till time to irrigate.

Keep the soil fertile.—Fertile soil produces a crop with much less water than does a poor soil. Grow soil-improving crops like clover, alfalfa, peas, etc., in a systematic rotation on each field. Use all the barnyard manure available.

Plan now to make the most of any irrigation device available for the next season's crop.

#### THE TYPHOON PUMP.

A new pump for irrigation purposes has been invented, known as the typhoon, said to be high in efficiency and comparatively low in cost. The American Construction Co., at Cape Flattery, has one of these pumps in operation. With 190 revolutions it produced 1750 gallons per minute, on a lift of 24 feet through 2000 feet of 10 inch wood pipe. The cost is about \$250. It is made by the National Pump Company, 542 First Avenue, South Seattle.

### Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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#### YOU CAN EARN \$50.00 PER DAY



with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2½ gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

## AWARDED GOLD MEDALS San Francisco 1915

## ZEROLENE OILS & GREASES RED CROWN GASOLINE

The Exposition jury found Zerolene first in lubricating efficiency; Red Crown, first in carbureting qualities, in purity and uniformity. A victory for Standard products made from California crudes, in competition with other gasolines and automobile oils!

## Standard Oil Company (California)

### Our Tested Seeds Produces the Heavy Crops

Seed Farms at O'Brien, Wash.



### New Crop of Seeds Ready

Don't run any risk. Send direct to us for CLOVER, TIMOTHY, RED TOP, ORCHARD GRASS, ENGLISH and ITALIAN RYE GRASS, VETCHES AND ALFALFA.

Write for prices and samples.

## Aabling-Ebright Seed Co.

89 Pike Street,

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## MONTE VISTA NURSERIES

PEAR TREES—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nells, P. Barry.

APPLE TREES—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

A. HOLADAY SCAPPOOSE, OREGON



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FONSECA

## HOME AGAIN.

By Helen M. Richardson.

I'm home from my summer vacation,  
 And such a fine time as I've had!  
 I'd like to tell every relation  
 About it;—I know they'd be glad  
 To hear there's a place in the country  
 Where horses may frolic and run,  
 Cut capers and all sorts of antics  
 Out in the green grass—just for fun.  
 You could count ev'ry bone in my  
 body  
 The day I was led to the spot;  
 My ankles were swollen and aching,  
 For life I cared never a jot.  
 A sore on my back had been smarting  
 For weeks, and the pestering flies  
 Made life but a misery and torment;  
 And didn't I open my eyes  
 When Master just loosened my bridle  
 And said, "For two weeks here's  
 your home;  
 Enjoy it, old boy,—it's your privilege  
 Wherever you wish to, to roam."  
 And look at me now! Would you ever  
 Suspect that I'd been in such  
 plight?  
 And that these two weeks in the  
 country  
 Would have covered my ribs from  
 your sight?  
 I doubt if the horses will know me  
 when back to my work I shall go,—  
 Dick and Jack of the coal team, for  
 instance,  
 And Nancy, the hack horse. I  
 know  
 They all will be glad I've recruited,—  
 I think that's the word I should  
 say,—  
 And I hope all my friends in the city  
 Will have such a playtime, some  
 day.

## PURIFYING THE DRINKING WATER.

The prevention of typhoid fever, dysentery, and other intestinal disorders in the rural communities, needs special attention. These diseases are caused by certain bacteria and they are commonly present in polluted water. The use of water, therefore, from old wells, streams, etc., which is often necessary during the harvesting season, is always attended with danger and something should be done to purify such water before it is used for drinking purposes. Professor C. A. Magoon, Bacteriologist of the Experiment Station, Pullman, Wash., gives the following method for the purification of water:

For the destruction of all dangerous bacteria which may be in water nothing equals in efficiency and convenience ordinary chloride of lime. This may be obtained from almost any grocery store in 10-cent cans and the amount required is so small as to make the cost for the entire season almost negligible. It should be used in the following manner:

One tablespoonful of the chloride of lime is dissolved in ten quarts of water. This quantity is sufficient to treat 1000 gallons of water, and the operation is carried out by simply pouring the clear solution into the water to be treated and stirring thoroughly. This solution is a powerful germicide and its action is very rapid—ten minutes or so being all the time required to carry out the purification. One quart of this solution is sufficient to treat effectively a tank containing 1000 gallons of

water and one pint of it stirred into the 50-gallon water barrel filled with water will destroy any dangerous germs and make water safe for drinking purposes. The solution should be prepared fresh each time, as it loses strength on standing, and the can of chloride of lime should also be kept tightly closed until needed again.

One is cautioned against the use of too much of the chemical, not because it is dangerous at all, but because an undesirable odor or taste may be imparted to the water where too large amounts are used. The strength of solution indicated above used in the manner described will be found perfectly satisfactory. The qualities of the water will in no wise be impaired and no undesirable conditions will arise from its use. On the other hand dangerous water may be made safe and much sickness prevented.

## INDIVIDUALITY IN SERVICE.

Put heart into your work. The spirit of the worker is easily detected. "His heart is not in his work." How often we hear that saying; and the first man to lose his job is the heartless worker. Are you a teacher, a Christian worker, a member of a committee? How much heart are you putting into your task?

Put will into your work. Nothing can stand in the way of a determined will. "He that willeth to do the will of God—shall know. God loves to put his grace into a determined heart. Get that wonderful picture in Acts 21:11-14. It is a tonic for anyone who is likely to be weak-willed.

## THE GLADIOLUS.

The Gladiolus is better adapted for general cultivation than any of the many rare and beautiful flowering bulbs. It is remarkable for ease of culture, grace of habit, beautiful form and intensity of colors, ranging from vivid scarlet to pure white, from rose to yellow and bright purple; in many of the species the colors are wonderfully and beautifully blended.

A writer in the New York Sun suggests that Gladioli are effective between roses, phloxes, dahlias and subjects of somewhat similar character, and also in clumps alternating with tritomas and when associated with masses of cannas, while they are suitable for intermixing with plants whose dark foliage shows off the rich bowers to advantage. Those who desire their gardens to be beautiful late in the autumn should not fail to employ the Gladiolus largely, as it is the handsomest of the late blooming gardening plants, and its spikes show to great advantage about the time of the heavy autumn rains.

When spikes of extra fine bloom are required it is necessary to give special treatment, and an open situation is of the utmost importance. A deep, loamy soil, not too heavy, is the most suitable for producing exhibition spikes, but very satisfactory results may be obtained by deep digging and liberal manuring in soils of an uncongenial character.

The planting may be done at in-



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Write for prices on quantities.

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tervals of a week or two apart, to secure a succession of bloom, from the middle of April until the first of June.

When the spikes are cut, the flowers will last longer if cut before the lower blossoms have opened. When the spikes are placed in water the flowers will go on expanding until every flower is open, often continuing for weeks in full beauty.

## ORNAMENTING THE HOME YARD

With the native firs, cedars and other natural evergreen trees of the Pacific Coast for back ground, then the syringas, lilacs, snowballs and like flowering shrubs grouped next in front, there is adjoining a place on the borders of a well formed lawn for the different varieties of flowering bulbs which blooms from early spring on through the summer season until late in the fall. There are many beautiful homes among the farmers of the Coast Section, yet very few which have so complete a list of the bulb flowering plants as could easily be obtained with a little diligence and forethought. If the buying power is limited, then purchase a few bulbs of some desired variety each year from a list which will eventually cover the season. Among these are the snowdrops, crocuses, hyacinths, daffodils, narcissus, tulips, paeonies, the whole lily family, gladiolus and dahlias. Once the bulbs are in the ground they come from year to year with very little care and as they bloom at different times may be planted, if necessary, in very close proximity. Get a very few bulbs of each kind and after a few years you have a wealth of bloom throughout the season, providing the soil is kept in proper nourishing condition and common sense care is devoted to the cultivation and transplanting. Then there are hedge plants, such as sweet alysum, Canada tuft, and the ten week stocks which

TEST  
OF 21  
YEARS

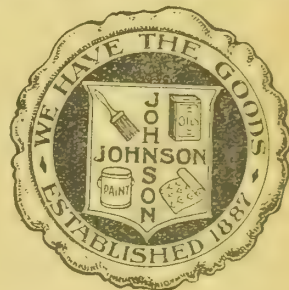
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## HARDWARE

Complete lines for needs of farmers. High quality, prompt service, right price.

Write us your needs.

**HENRY MOHR HARDWARE CO.**

1141 Broadway,

Tacoma, Wash.

flourish and in this climate are biennials.

Many of our readers from the Pacific Northwest have been inspired from their visit to the beautiful Panama-Pacific Exposition at San Francisco, and no doubt but the array of flowering plants there shown will serve to stimulate the further ornamentation of the farm homes in the Pacific Northwest. The Coast Section is naturally rich in verdure of native evergreens and it requires scarcely more than a smooth grass lawn and a succession of bulb flowering plants to complete the most beautiful picture of a home imaginable. Don't try to spread over to great a surface, but begin at once to plan for a succession of flowers, the kind when once planted will require very little work and attention and yet produce the beautiful effect which makes the farm home both beautiful and restful.



**PLANTING FLOWERING BULBS.**

How to plant and handle the bulbs as well as the best method of getting them to become spring residents of grassy corners, are described in the following direction issued by the bulb specialists of the United States Department of Agriculture.

Plant in light, rich soil that has been dug to a depth of at least 10 inches. The tulip bulbs should be set 5 inches apart and 4 inches deep and the narcissus bulbs about 10 inches apart and 5 inches deep.

If they are to be grown in pots or window boxes, light, rich soil should be used. Place 1 to 2 inches of cinders or broken pots in the bottoms of the pots or boxes to insure good drainage. After planting, place the pots or boxes out of doors and cover them with about 4 inches of ashes or sand; or they may be placed in a dark, cool room or cellar for a few weeks until the bulbs have formed a quantity of roots. They may then be brought into the light and heat for flowering. Keep the soil well moistened from time of planting, but avoid overmoistening, for if kept too wet the bulbs will decay.

**Cultivation.**

If planted in beds, the surface of the soil should be loosened after each rain and the bed kept free from weeds. In the late fall or early winter months it is well to cover the beds with a light mulch of straw or leaves to prevent injury to the young roots from any alternate freezing and thawing of the soil. This mulch should be gradually removed in spring, as soon as growth appears above ground. The bulbs are quite hardy and are not injured by severe cold if the soil is well drained.

**Lifting and Dividing.**

Tulip and narcissus plants are perennial, and if given proper care and grown under suitable soil and climatic conditions will increase and

multiply from year to year. The bulbs may remain in the ground two or three years, or until the clumps begin to crowd. After blossoming in the spring, from six to eight weeks should elapse to allow the foliage to die partially down, when the bulbs may be lifted with a spade or fork. Shake the soil from the roots and store the bulbs in a cool, shady place where they will ripen and cure. When the old leaves and roots are thoroughly dry they may be easily rubbed off and the clusters of bulbs divided. The bulbs may then be planted in the same manner as the original bulbs. In this way the stock may be increased in a few years.

**Naturalizing the Narcissus.**

The narcissus often becomes naturalized when planted in the sod or partial shade, where it will continue to grow, blossom, and multiply for many years without further attention. Simply make a small hole in the soil 5 or 6 inches deep, insert the bulb pointed end up, press the soil over the top, and nature will do the rest. For naturalizing, avoid planting in rows or rigid geometrical figures. A good plan is to scatter the bulbs like seed and plant where they fall. This method of planting is extensively followed in the home grounds and parks of England and other countries in Europe. In portions of North Carolina, on large estates along the James River in Virginia, and in old gardens in New England, narcissuses that were planted over half a century ago are still growing vigorously and every spring produce beautiful displays of blossoms.

Many of our readers have screened porches and they have eliminated as much of the fly breeding places as possible. Good health on the farm is better than too many short cuts to wealth. Protect from the filth carrying fly in every practicable way.

## DAIRY DEPARTMENT

**Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.**

**PLEA FOR QUALITY.**

The Lynden Co-operative creamery makes a strong plea to its patrons for a better quality of cream. It is good Sound argument, which the creameries will readily endorse and the suggestions should be headed by thousands of creamery patrons throughout the Northwest. Listen! Take better care of your cream. If you cannot keep your cream sweet for two days during this fall weather you are not absolutely clean in handling your milk and cream. A chain is no stronger than its weakest link. If you leave any part of your milk utensils unwashed you have a weak link in the chain. You leave a breeding place for undesirable germs and the next time you use your separator you spread the germs to all the cream. Remember if you keep everything clean around your dairy your cream will not sour in two days, under ordinary weather conditions. Do not get sore at us if we mark your cream second grade. Get sore at yourself and try to improve your cream. The only way to get top prices is to produce the top stuff. If we all work together to improve the quality we can make Lynden

famous for its butter. We have the quantity. Let us not forget the quality.

**WORLD'S DAIRY CONDITIONS**

Milk Supply.—In the principal milk-producing centres of Europe deliveries of milk were, during the past quarter appreciably, less than in the corresponding period of the preceding year, according to inquiry office of the Swiss Agricultural Society. Austria, Hungary, France, Germany, Switzerland, Norway, Sweden and Denmark report a serious falling-off in the supply. In Italy it is less marked. Holland alone maintains approximately the level of the preceding year. England, the United States and Canada show a small increase.

Prices of Milk.—The prices of milk are, in general, higher than in the corresponding period of last year. Italy and the United States alone show a slight set-back. The tendency to rise has been still further accentuated during the past quarter. The high prices of other provisions (bread, meat, eggs, etc.) have had the effect of stimulating the demand for milk and dairy produce, whilst, on the other hand, there has been a serious

## GRAND PRIZE

PANAMA-PACIFIC EXPOSITION

Awarded to

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as the Highest Award has been at every International Exposition since the invention of the Centrifugal Cream Separator in 1878. And likewise as at all previous expositions, all higher dairy product awards at San Francisco have been made to users of the De Laval machines.

### DE LAVAL DAIRY SUPPLY COMPANY

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#### SKYKOMISH VALLEY HERD HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**  
N. P. Wharf, Tacoma, Wash.

### LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.89 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

**P. A. FRAKES**

Scappoose, regon

## HOLSTEIN FOR SALE

Do you want some good foundation stock from high record A. R. O. breeding and choice servicable dairy cattle. Then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

### TYSON & McKELHEER

Moxee City, Wash.



diminution in the supply. The demand for cheeses and analogues produce of a long-keeping character, at all times very active, has resulted in a marked rise in the price of milk for cheese-making in particular. The prices of milk for household, butter-making, and condensing purposes have not everywhere risen to the same extent.

**Movements in Cheese Prices.**—In the cheese-markets the past quarter was characterized by a very considerable rise in the prices of every variety of cheese in comparison with the same period of last year. In Italy alone have the prices of certain kinds (Italian Spring, Maggengo, Reggiano) maintained approximately the level of last year. The American market, too, has taken a favorable turn, the prices obtained being, in general, higher than those of last year.

#### FOR SHIPPING OF CREAM.

In order to obtain a higher average standard quality of cream which is necessary for a uniform output of butter to attract buyers of large quantities, Miller Bros. Company, Tacoma, have sent the following instructions to shippers:

Be sure to cool down your cream by having your receiving can in the coldest water you can get. Stir the cream while cooling. Do not add warm cream to the cool cream. Do not use the solid cover on can while holding cream. Let the pure air get to the cream. Use a cloth screen or get a wire screen to use as a cover. Be sure to scald out the shipping can thoroughly before using.

Take special care of your separator; see that it is made perfectly sweet and clean after each separation.

The best shipping test is from 30 to 35 per cent. Adjust your separator so that it will skim at this test.

Don't hold cream too long.

If you will follow these instructions carefully your cream should come in good condition and pass inspection without any trouble.

#### JOHNSON'S HOLSTEINS.

Mr. Albert Johnson, Scappoose, Oregon, is fortunate to have considerable of the Johanna breeding in his Holstein herd. This blood is close kin to the famous Finderne Pride Johanna Rue, the world's dairy queen, with a year's record of 1470 pounds butter. He has fine crops of youngsters now taking the place of those being selected by dairymen from all parts of the northwest.

#### GUERNSEYS FOR AUGUSTINE AND KYER.

Six very choice Guernsey cows, one heifer and two fine young bulls selected by Mr. Henry, a Kyer from the herd of a New Jersey importer, last spring, arrived safely in Seattle during the early part of August and was placed at once on the noted farm of Augustine and Kyer, across Lake Washington, from where milk and cream is obtained for their city trade. Mr. Kyer saw the herds of a large number of Guernsey breeders before making a selection, for he was particular about the breeding quality, record as to producing capacity, and general appearance of the stock, which was held back several months on account of the quarantine. They are out of the noted Governor Chene breeding, and are doing well in their new home.

Mr. Kyer has sold a number of

very choice pure bred bulls to head various dairy herds in the northwest. The cows and heifers will be retained for practical dairy work until a surplus number are raised.

#### GOOD TIME TO BUY COWS.

A close observer of the dairy industry in the Pacific Northwest figures that now is a good time to buy dairy cows, for those who have places adapted to dairying. The average price of dairy cattle is lower than a year ago, and some good selections can be made.

The cause for the slump in condensed milk prices the past couple of years is due to depressed business conditions generally, particularly in the lumbering sections and to the importations of some cheaply made condensed milk, said to consist of skim milk and sugar, which is virtually unfair competition. But these things will soon be righted and dairymen who have made the preparations necessary for an increased volume of dairy work will profit by their enterprise.

There is a shortage of both meat and milk cattle in this country, and the shortage is daily increasing. We have 10,000,000 fewer cattle in the United States than we had ten years ago, yet we have perhaps fully 10,000,000 more people than we had in 1906. It certainly looks safe for the landowner to invest at the present prices in cattle of any sort, but the prices of dairy cows are particularly attractive.

There are always people who argue that the dairy business is just as liable to be overdone as any other business. But facts do not seem to bear out that statement. It was not overdoing the business that caused the present slump. It came from an unequal competition—unfair competition. Imported skimmed milk filled with over 50 per cent. sugar has been dumped into the country by the shipload and placed in competition with American whole milk without sugar. If the American condenser put up this kind of milk he would have to pay the duty on the sugar content; it comes in duty free in condensed milk.

The Underwood law, according to an Oregon milk manufacturer, has caused United States markets to be flooded with condensed milk from foreign countries, while our own manufacturers are either pursuing a hand-to-mouth policy or storing their output in warehouses, hoping the prices may go up with the return of prosperous times.

A change is not far off when better condensed milk markets will prevail.

#### HIGH RECORDS AT GRANGER.

Both Holsteins and corn crops are making some high records at Granger, Washington, this summer. The warm weather evidently is making some 100 bushels per acre yield, proof to be determined at harvest.

In a recent letter to the Horticulturist and Dairyman, Mr. H. C. Davis, proprietor of the Valley View Dairy Farm, Granger, writes:

The Holsteins never were doing as well so far as looks go, nor were they ever doing as well at the pail. We have been officially testing most all summer. Since May 25th, Terpra Pontiac, (a grand daughter of King of the Pontiacs), freshening at 2 years and 2 months of age made for 7 days milk over 450 lbs., making

## "Increases the Milk Flow Strengthens & Improves the Physical Condition of the Cow"



That's what A. W. Morris & Sons (breeders of the new world's champion milk producer, Tilly Alcartra) say about Dried Beet Pulp.

Read this letter:—

Woodland, Cal., May 13, 1915.

"The Larrowe Milling Co.,  
Gentlemen:—

Having fed Dried Beet Pulp for the past four years in the official testing of our herd of registered Holstein-Friesian cattle we feel that we are in position to judge of its value as a dairy feed. We can now say without hesitancy that it is one of the best and most economical dairy feeds in the market, and for the dairyman in the alfalfa districts it is invaluable as a supplement to alfalfa.

Dried Beet Pulp fed with alfalfa will not only increase milk production, but it will materially strengthen and improve the physical condition of the cow, which enables her to maintain this milk flow, produce better offspring, and prolongs her period of usefulness. In feeding for maximum production we find Beet Pulp quite a necessity, as it has the effect to lighten the ration and tends to offset any injury which might arise from heavy feeding. We also find it valuable for growing calves.

(Signed) A. W. MORRIS & SONS CORPORATION  
By F. L. Morris."

IF YOU are in doubt about the value of Larrowe's Dried Beet Pulp for feeding to your cattle, we suggest that you get a single 100-lb. sack from your dealer and test it on one cow whose milk record you know. It may be had either plain or with molasses. Ask your dealer for LARROWE'S.

#### Feeding Instructions Free

Write for a copy of our valuable booklet "Profitable Feeding," sent free on request to any address.

THE LARROWE MILLING CO.  
933 Central Bldg. Los Angeles, Cal.



**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

## GLENDALÉ CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

GLENDALÉ CREAMERY CO.,

D. S. Troy, Manager.

Chimacum, Wash.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman



22.67 lbs. butter and in 30 days she gave 1797.5 lbs. milk and over 88 lbs. butter. Pansje Hengerveld De-Kol, a 3 year old, made in 7 days 20.735 lbs. butter. Claricy Kid 2d, an aged cow, made 20.621 lbs. butter. Orchard Farm Princess, a Jr. 4-year-made 25.473 lbs. Golden Pietertje Twisk, a Senior 2-year with first calf, made 19.782. Besides we tested quite a number for my neighbors that I had sold to them and with the very gratifying results, that in most instances they beat my own of the same ages.

Sales in young bulls have been brisk and all to Yakima County people. This I think speaks well for the future of the valley, for with good cows and with the feed we can raise in the shape of corn ensilage and alfalfa, we can not fail to make good with the cow, even though we do have some 100 degree weather.

The hay crop in this valley in the total is some short, but it is of excellent quality. Corn this year, to say the least, is certainly immense. I would hate to tell just how good I thing it is for fear some of your readers would say that it was just Yakima hot air. However, if any reader will come over we can show the hot air and the corn, too.

#### MODERN HOME FOR FRAKE'S HOLSTEINS.

Mr. P. A. Frakes, the famous Holstein breeder at Scappoose, Oregon, has been compelled to build a larger barn for the pure bred Holsteins that will soon find new homes among the dairies of the country.

The barn is thoroughly modern, and every detail has been carefully planned by the owner. The cow has received every consideration, and in Mr. Frakes' own words. "The cattle have made the money for us, so they are entitled to a reward," is found the reason for the thoroughness of the work.

The \$5,000 barn, according to the Oregonian, is 126x64 feet, contains stalls for 85 head of cattle and five head of horses, and the loft will house 200 tons of hay. The floor of the barn is of concrete and the stall floors have been laid with cork brick.

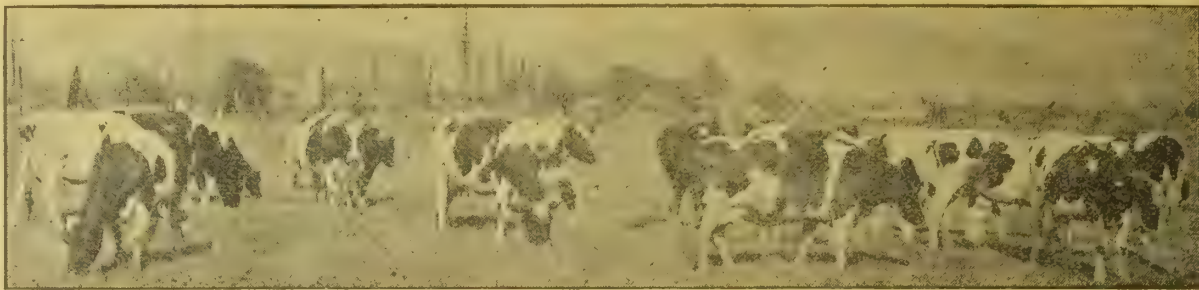
Pens have been provided for every emergency that comes on the ranch, for Mr. Frakes has studied barns all over the country and has injected his own ideas into his planning, so that his barn is absolutely complete.

Mr. Frakes moved to the place where he now lives 32 years ago, and from an uncultivated farm of 160 acres and a house of a few rooms his ranch has grown to one of 600 acres, graced by a modern ten-room house and one of the best barns in the Northwest. Mr. Frakes has made a specialty of raising nothing but Holstein stock, and blue ribbons by the hundreds festooned the walls of the barn and were suspended from post to post at the barn-warming event.

Mr. Frakes herd of 100 head is valued at \$25,000, and this herd is constantly being thinned and added to by means of his own breeding.

Many dairymen in the Northwest, now in prosperous condition, selected a pure bred sire, cow or calf from this herd. Others have sent to Mr. Frakes certain sums of money giving a general idea of their needs and asking him to make the selections. Repeatedly do such buyers come again for more, evidence of entire satisfaction.

## Holsteins of Pontiac and Hengerveld Dekol Breeding



A number of our choice cows went into the sale at Snohomish, September 15. Their records and pedigrees are carefully catalogued and are fair samples of our large herd. As our crop of youngsters are constantly coming on we can supply young bulls from heavy producing ancestry at very moderate prices.

We can also spare a few more cows whose records and prices may be obtained on application. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

There is a growing demand for dairy stock. Buyers are particular about quality. It is a good time to get started right, while the butter market is becoming quite satisfactory.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

### Electric Light Farm

#### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

### VALUE OF TESTED SIRES.

During the past ten years dairying has become more nearly an exact science than ever before. The inventors of dairy machinery and the experiment stations have been great helps and there is little excuse for any dairy farmer to continue blindly keeping cows without knowing to some degree of certainty, what measure of profit he may reasonably get from a certain size herd covering a fixed period. Any thinking dairy farmer with cleanly habits can hardly fail to be well rewarded for his efforts. He is particular first of all, to use only a sire of some definitely fixed merit.

Breeders in the Pacific Northwest who have made handsome profits during the past five years attribute their success to careful selection of herd sires more than to any one particular item. The same is true of those who now own profitable dairy herds kept only for dairy purposes. It is within the province of every dairy farmer to know, within a very few pounds, what each individual cow of his herd is producing and there is a way open for each dairyman to obtain the use of good sires. With a herd of cows, each yielding 200 lbs. butter fat a year, it is possible to more than double the net profit from same number of cows within five years by using a good sire. Many good young bulls can be bought today for much less than they are actually worth. Those who have too small herds to warrant buying for themselves only can benefit by uniting with one or more neighbors, forming a club for the purpose of procuring a tested sire. Idle capital today is seeking investment with dairymen of integrity, who know the value of tested sires.



## Puget Sound Herd Holsteins

HERD SIRES—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

"Quirinus Cornucopia," whose six of the first daughters to be tested, have averaged 19 lbs. butter in 7 days as 2-year-olds. They are all making good in yearly tests including "Chimacum Wayne Boon 2d," 2 years old. She has just finished a years test of 21,572.1 lbs. milk and 881.68 lbs. butter. This record is the highest in the west for both milk and butter. She is a sister on her dams side to "Sir Chimacum Wayne," the world's greatest average record milk and butter bull. He is also brother on his sires side to the world's record heifer "Aaggie Nena Cornucopia."

Young bulls up to one year old are now being offered for sale from the above sires.

**WM. BISHOP, Prop.**  
Chimacum, Wash.

## Cascade International Stock Show

THE GREAT MID-WINTER STOCK EXHIBITION

\$15,000.00 in Premiums

For Premium List Address

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

**E. R. BRADY**  
Satsop, Wash.



**THE COUNTRY CREAMERY.**

On the good and healthy competition between the country creamery and the city creamery or centralizer, Mr. Donald McInnes, gives some good points showing advantages of the country plant in a recent issue of the Daily Produce News:

In the country practically all conditions are right for making a better grade of butter than in the city. The most valuable asset of all to a country creamery is nearness to the source of supply of cream and the opportunity for frequent gatherings and frequent churning. This is an advantage that must always remain with the country creamery and a handicap to the buttermakers of the city creamery that cannot be overcome.

Again, a great many of the patrons of the country creameries take a pride in their factories and their brand of butter, hence take good care of their cream. This is a local pride not measured in dollars and cents and is entirely absent when their cream is shipped to city creameries many miles distant. Again, in the methods of gathering you will find in the driver of the wagon or motor such a pride in the quality of the product of that particular country creamery that he is working for as to make it a pleasure for him to take all possible pains to see that the cream reaches the creamery in the best possible condition. This is one of the hopeful signs of the times and one of the factors for good that are entirely absent in the handling and shipping of cream to the large central city plants.

During the past six months the country creameries have made much progress in laying foundations for higher uniform quality of product and for independence. Several of them are preparing to put in cold storage plants in order that they may

store for any short period of time when the butter market is off, and for that purpose are arranging to finance the operation of the plant, and of their members by borrowing money from local banks on a gilt edge product when necessary to do so.

**BUTTER MAKERS CO-OPERATE.**

Secretary N. P. Sorenson, Bellingham, Washington, when urging butter makers to exhibit at the State Fair, seeks co-operation for a higher quality on their part. The foundation for a higher quality of butter, he says, is a higher quality of cream. Because of his close personal touch with the producers of the cream, many of whom bring their product to the creamery several days in the week, the buttermaker commands a greater influence than any other man or class of men in the passing on of information which will lead to the production of better cream. My experience has taught me that the majority of the dairy farmers are willing to try to produce a better quality of cream, but they must be shown how.

The question will at once arise: Is it necessary for us to improve the quality of our butter? Emphatically, it is. We have reached the point where we must meet the competition of the world. We are now producing practically all the butter that is consumed in this state, and since the dairy industry is growing by leaps and bounds, we will soon have to look for other markets. Since we "live and move and have our being" in the best dairy State in the Union, both with regard to climatic conditions and feed producing qualities, we have no excuse for not making our way to the head of the ladder.

**Concerted Efforts****Responsibility of Producers for Market Development.**

In the Pacific Northwest the production of butter is nearly equal to the amount consumed. In the State of Washington it is estimated that the past year production was 95 per cent. of consumption. This signifies that we will be ready for export by another year and must line up with the Northwest rural system which is safe and sure for some margin of profit to the producer.

In several communities this preparation for the export trade is progressing faster than in others. The quality of butter, in some of the leading creameries both in the country and in the city, is first class, their pack is uniform and their style attractive, and they are ready to adapt operations to suit the wishes of any outside market. On the other hand, about 90 per cent. of the entire amount of butter produced in the Northwest ranges only from medium to very poor in quality. There has been insufficient care on the part of dairymen in too many cases due perhaps to lack of insight into the essentials for high quality product and also in part for lack of pressure to make such necessity felt. Information is available, from our state and government institutions, on how to

produce butter of high quality and through the agricultural head of the State of Washington pressure is now brought to bear by means of inspection and the rejection of poor cream which falls below a certain test for quality, through official action.

**General Co-operation for Better Work**

It is generally conceded by merchants and the United States Agricultural Department that the butter makers of today, as a whole, are much more capable of manufacturing first-class butter than were those of 10 or 15 years ago. Modern methods and machinery and the results of years of experience and investigation have made it possible to manufacture good butter, provided a good quality of cream is available. It is, however, impossible for the best of butter makers to make a sweet, wholesome product from poor cream. Old, unclean cream not only ferments but often decomposes. And yet creamery butter makers are criticized because they have not been able to make old and unclean cream into butter that will pass as extra quality in the market.

Much of the responsibility for the poor quality of butter today rests on the producer of cream. He alone is responsible for the quality of cream that is furnished the butter maker.

The most economical and safest way to build up your herd is by raising your own calves. Whole milk is too expensive to feed calves.

ALBERS CALF MEAL is the best and cheapest substitute you can buy and it can be fed with absolute safety. It contains nothing injurious or harmful. The basis of ALBERS CALF MEAL is ground oatmeal, the feeding value of which is well known to every dairyman.

One hundred pounds of ALBERS CALF MEAL is equal in feeding value to one hundred gallons of whole milk and like all other feeds manufactured by us is guaranteed to give satisfaction and to be just what we claim for it.

Secure ALBERS CALF MEAL through your dealer or write us direct.

**Raise Your Calves**

**Albers Bros. Milling Co.**

Seattle  
Tacoma

Portland  
San Francisco

**CASH FOR CREAM**

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

**Miller Bros. Company**

1532 Commerce St.

TACOMA, WASH.

**A. J. C. C. JERSEYS**

**Big Producers**

A very fine heifer calf for sale that is a beauty. Sired by my great bull "Mermaid's Sultana's Lad 114734." Dam Oza of Sunnybank, dam of first prize three-year-old cow at Washington State Fair. Young bulls for sale of the highest breeding. Member American Jersey Cattle Club.

**J. B. EARLY**

Grandview, Wash. (Yakima County)

**Waikiki Farm**

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

**IRA P. WHITNEY, Supt.**

Route 7, Spokane, Wash.

**Pure Bred Holstein Records**

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**

NORTH YAKIMA, WASH.

**JUANITA STOCK FARM HOLSTEINS**

Home of Margie Newman, the world's record cow, No. 76312. Our 2-year-old Nena Cornucopia produced in 30 days 2733.3 lbs. milk and 95.037 lbs. butter.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,  
CHIMACUM,  
WASH.**

Kindly mention this paper



Strong competition among the creameries, rendering the creameryman fearful of criticizing his patrons' product, has been the cause of much of the poor cream of today, but the creamery patron is confronted with the fact that in the future he will be the loser if he continues to dispose of poor cream through the creamery. The butter markets—the basis of the creamery industry—are becoming unsettled, because of the influx of so much poor butter, and the farmer need not be surprised if he is forced to receive a lower price, particularly for his low-grade butter fat, than he has during more recent years.

All the conditions governing the quality of cream are under the control of the producer. Very little effort is required to improve ordinary conditions, so that a cream of the best quality may be produced at all times. It will soon become evident to the dairyman that, from a financial point of view, the little effort he exerts in producing a good cream is very profitable. Following are some directions that will aid materially in assisting the patron to improve the quality of cream he is delivering to the creamery.

#### Factors Influencing the Quality of Cream.

(1) A clean, well-flavored milk is a prime requisite of a good cream. To produce this kind of cream the following conditions are necessary:

- (a) Clean, well-ventilated barn.
- (b) Clean, healthy cows.
- (c) Clean, well-drained barnyard.
- (d) Clean, healthy milkers.
- (e) Clean utensils, free from rust.

(2) The cream separator should be thoroughly washed and sterilized after each time it is used. Particles of milk or cream left in the separator act as a "starter" to hasten the souring of the cream.

(3) The richness of the cream is a very important factor; for the best results cream should contain from 30 to 33 per cent. of butter fat. Thin cream sours much more quickly than thick cream; hence thick cream can be kept sweet with less difficulty than thin cream. There is also less bulk to deliver to the creamery, more skimmed milk for feeding purposes, and the cream is in better form for the butter maker to handle.

(4) The temperature of the cream for holding should be 50 degrees F., or lower if possible. Cream sours very readily at temperatures above 60 degrees F., hence it should be held at a temperature below that. When practicable, creamery patrons should have an ice supply to assist them in this respect.

(5) The mixing of warm, fresh cream with cold cream is never advisable, as the whole mass is warmed thereby, and souring will follow more quickly. Always cool the newly separated cream before adding it to the cream on hand.

(6) If the cream is thoroughly stirred each time newly separated cream is added to that on hand, no lumps will form. The formation of lumps prevents proper sampling of cream for testing, and the patron is the loser thereby. Stirring also tends to keep the cream at an even temperature throughout, thus preventing parts of it from fermenting.

(7) The atmosphere surrounding the cream should be free from any undesirable odors; hence the cream should be kept in a clean, well-ventilated

place in order that odors may not be taken up by it.

(8) The protection of cream cans during hot weather is very important. During delivery in the summer the cans should be protected from the sun by covering with blankets in order that the temperature of the cream may not be raised more than is necessary.

(9) The intervals between deliveries of cream depend upon the season of the year. It should be delivered at least twice a week in the winter and three times in the summer.

#### VALUE OF GOOD SIRES.

Estimates carefully made from a large number of farms in Washington by R. N. Miller, Farm Extension Specialist, shows that where pure bred sires have been kept over three years the average receipt per cow in the herds was \$94.08 compared with the average receipt per cow of \$64 in herds where grade sires were used. The actual value of the cows was in about the same ratio.

A study of 25 herds headed by pure bred sires without respect to the length of time such sires have been used, show that farmers owning pure bred sires take better care of their cattle than those owning scrub sires.

#### RECORDS IN PUGET SOUND HERD.

A large number of cows and heifers in the yearly test have finished first yearly record. The 2-year old daughter of Chimacum Wayne Boon—Chimacum Wayne Boon 2d, freshened at the age of 2 years, 4 months and produced in 7 days 22.59 lbs. butter, in 30 days she made 89.29 lbs. Her best days milk was the 100th day of the test when she gave 81.9 lbs. In 365 days she produced 21,572.1 lbs. milk, 881.68 lbs. butter, this makes her the highest record heifer in the west for both milk and butter. She is sired by Quirinus-Cornucopia who has a number of other 2 year old daughters in the yearly test that is making records at the rate of 600 to 700 lbs. butter in a year.

Princess Pontiac Frenesta Burke at 3 years produced 628.9 lbs. milk and 26.3 lbs. butter in 7 days. At 2 years old she made 19 lbs. butter in 7 days and 8 months after calving, under official test produced over 12 lbs. butter in 7 days. This is the dam of the young bull purchased at the sale in Snohomish last March by Mr. A. E. Smith and Mr. B. S. Fryar.

Lutscke Vale Cornucopia 7 years old calved the 11th of last May, gave twin bulls and being dry but 6 weeks before calving which was the first time since she freshened at 2 years of age, produced 119.7 lbs. milk in her best days work and 813.7 lbs. in 7 days, 3385.58 lbs. in 30 days, 6563.2 lbs. in 60 days and at this writing she is 90 days in test and is averaging 105 lbs. of milk a day.

Jefferson Lilly 2d, 7 years old, produced 568 lbs. milk and 24.6 lbs. butter in 7 days and 2322.4 lbs. milk and 101 lbs. butter in 30 days.

Manor Aaggie Grace Korndyke, 9 years old produced 556.7 lbs. milk and 23.2 lbs. butter in 7 days.

Gettie De Kol, 8 years, produced 517.7 lbs. milk and 25.7 lbs. butter in 7 days and in yearly test has to her credit for 4 months, 413 lbs. butter.

Further seven day records are:

Veeman Burke Hengerveld, 3 year

## Holstein Home Herd

Watch for our exhibit and records at the different fairs during this season's circuit. Young cows and heifers bred to Mutual Fobes Longfield De Kol, No. 82959, the Grand Champion bull at the Washington State Fairs, 1913 and 1914, and a few choice ones bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old. Write for full records and prices on such stock as you desire.

**E. B. MARKS**

Route 5, NORTH YAKIMA, Wash.

## DAIRYMEN WANTED

Fine opening for good dairymen who have a few cows or some cash. Good opportunity for the 20-cow unit dairyman on a co-operative basis. For particulars address W. H. Kaufman, Bellingham, Wash.



#### VALLEY VIEW DAIRY FARM

Just a few young bulls of high quality left. No more females for sale until after our annual sale, which will be held the week of the Cascade.

International Stock Show at North Yakima, week beginning November 22nd.

For particulars, description and price, write,

H. C. DAVIS,

Granger, Wash.

## COTTONWOOD GROVE STOCK FARM

#### CHOICE HOLSTEINS

Our 1914 bulls are being closed out to make room for the other youngsters. Buyers who are putting off the purchase of herd sires until fall should write us now as we can save them 50 cents on the dollar. Our bulls have the Homestead, Pontiac and Johanna breeding, the latter being closely related to Finnerne Pride Johanna Rue, the queen of all breeds, with butter record of 1470 lbs. in 365 days.

**ALBERT JOHNSON**  
SCAPPOOSE, OREGON

## Milk That Is Milk

ONE OF THE LARGEST MILK COMPANIES IN THE COUNTRY DEALING IN WHOLE MILK HAS RECENTLY ESTABLISHED A SCALE OF BUYING AND SELLING MILK ACCORDING TO THE BUTTER CONTENT. THIS IS AMPLIFIED REASON WHY THE DAIRYMAN SHOULD INVESTIGATE THE MERITS OF THE GUERNSEY.

Free Literature on request.

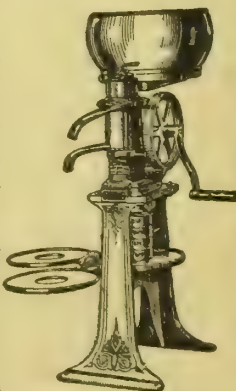
**The American Guernsey Cattle Club**

BOX 20, PETERBORO, N. H.

## Anker-Holth

Without a Peer

At a large meeting at the factory where the Anker-Holth Cream Separators are made, that was held the first week in August, it was clearly demonstrated by users, dealers and representatives of the company from different parts of the United States, all of whom had used and handled the different standard makes of separators, that the Anker-Holth stood unequaled by any. Ask Us Why. It Will Be Plain When You See It, or Read About It.



**The J. C. Robinson Co.**  
47 First St., Portland, Or.

**BLACK LEG** LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

**Registered Jerseys**  
Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.



old, 516.5 lbs. milk and 21.45 lbs. butter.

Lilly Johanna Beets 2d, 3 years, 490.4 lbs. milk and 20.92 lbs. butter.

Hazelwood Ormsby Posch, 3 years, 497.7 lbs. milk and 20.2 lbs. butter.

Oonois Beauty De Kol, 4 years, 518.6 lbs. milk and 19.55 lbs. butter.

Quirinus Paul De Kol, at 1 year 11 months, 391 lbs. milk and 15.69 lbs. butter.

Jennie Korndyke Clothilde, 1 year 11 months, 308 lbs. milk and 14.1 lbs. butter.

Chimacum Sensation Maid, 2 years 3 months, 505.1 lbs. milk and 17.68 lbs. butter.

Regis Friend Susie De Kol at 9 years of age produced 18.7 lbs. butter and 509 lbs. milk in 7 days.

WM. BISHOP,

Per J. Van Trojen, Jr., Herdsman,  
Chimacum, Wash.

### OLEO AND BUTTER WAR.

The National Dairy Union is lining up dairymen in all parts of the United States to prepare for a fight in the next congress for protection of the natural color of butter. The National Dairy Union is getting ready to re-introduce the bill which they had framed two years ago, but lacked a correct method of measuring color, which has recently been furnished by the the Bureau of Standards.

The natural color of oleomargarine is white, and the natural color of butter is yellow, and when oleo is colored in imitation of yellow butter it brings from 5 to 20 cents a pound more than when it is uncolored. The coloring yellow of any imitation, or substitute, for butter, is done for the purpose of using this trade mark, and to make deception possible. The dairy cow cannot stand against this unfair competition, for where substitution is possible, competition is impossible. The last few years has proven conclusively that where oleomargarine is sold uncolored, it is of a better grade and sells for less money than when colored. For the protection of the consumer, and the producer of honest dairy products, the National Dairy Union contends that each product should stand on its own bottom; that oleo shall not be made in imitation of butter of any shade of yellow. Financial support to the Union to protect the dairy interests should be sent to W. D. Hoard, Treasurer, National Dairy Union, Fort Atkinson, Wisconsin.

### SOME GUERNSEY RECORDS.

The Guernsey cow, Imp. Violet IV of Corbinez 32405 A. R. 1780, bred on the Island of Guernsey and now owned by E. W. Oglebay of Elm Grove, West Virginia, freshened March 4, 1914, producing a beautiful heifer calf and was started on test four days later. During the following year she produced 16336.4 lbs. of milk and 756.72 lbs. of butter fat.

Imp. Violet IV of Corbinez 32405 A. P. 1780, was sired by Imp. The Conqueror II 15323 A. R. who is a son of Governor of the Chene 1297 P. S. and out of Imp. Primrose of the Gree 28518. Imp. The Conqueror II 15323 A. R. now has ten daughters and one son in the Advanced Register including Imp. Daisy Moon III 28471 A. R. 1909, who as a three year old, carrying a calf six months, made 12489.90 lbs. milk and 710.70 lbs. butter fat, and has recently completed a record, as an aged cow, of 18019.4 lbs. milk and 928.39 lbs. butter fat.

Rosa of Cherrydale 30110, A. R. 1902, has produced four calves, three of which have been heifers, the only one in milk being Cheery of Edgewater, mentioned above, who produced 18454.20 lbs. milk and 732.97 lbs. butter fat as a two year old.

#### Guernsey Sires for Grading Up.

In Newaygo County, Michigan, by the use of Guernsey bulls one farmer raised the profit of his entire herd from \$13.04 per cow to \$50.01 in seven years. In another herd, by the use of a Guernsey bull, an increase in production from 225 to 341 lbs. of fat and in per cent. from 3.94 to 5.05 was obtained. A Kansas farmer who three years ago paid \$175 apiece for a dozen high grade Guernseys can show figures which tell the story of how these cows have more than paid for themselves each year since their purchase,—and dozens of other instances might be sighted.—A. G. C. C.

### CARE OF MILK ON THE FARM

Milk—Its Composition and Characteristics.

By James N. Price, Dairy and Live Stock Specialist, State College Pullman, Washington.

A general knowledge of the character and composition of milk is necessary to the proper understanding of its production and care. Milk is one of the most valuable of human foods; yet, as it is commonly handled, it may become one of the most



## Thousands to see Dairy Equipments

The DeLAVAL CREAM SEPARATORS, ALPHA ENGINES, VIKING PUMPS and the JAMES BARN FIXTURES will be shown to thousands of visitors during the fall fairs held at Spokane, September 13-18; Washington State Fair, North Yakima, Sept. 20-25; Oregon State Fair, Salem, Ore., Sept. 27-Oct. 2, and at the Western Washington Fair, Puyallup, Sept. 28-Oct. 3.

Those interested in dairying find these exhibits both attractive and instructive. There are many facts pertaining to dairy machinery, equipment and supplies, which if properly understood, may save the dairy farmer considerable money.

The representatives in charge of these exhibits are glad to answer questions and explain any particulars.

DeLAVAL DAIRY SUPPLY CO.,

101 Drumm St.,  
San Francisco.

1016 Western Ave.  
Seattle, Wn.

### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

## Registered A.J.C.C. Jerseys

Young bulls from heavy producers  
FOR SALE

Grandsires have many tested daughters. Also some choice purebred

POLAND CHINA PIGS

Write for prices.

E. L. Lloyd

Box 466

Monroe, Wash.

### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

MOUNTAIN VIEW FARM

Mt. Vernon, Wash.

Otto Rundgren, Prop.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

MRS. D. F. ALWARD,  
Orting, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1

Lynden, Wash.

## GUERNSEY BULLS

In our recent shipment from the east are 2 very choice young bull, descendants from Gov. of Chene breeding which we offer,—a rare opportunity for high record and very choice stock. After inspecting many herds our selection was made from a noted importer of Guernseys.

DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

AUGUSTINE & KYER,  
First St., Seattle, Wash.

### EXHIBIT OF DE LAVAL DAIRY SUPPLY CO.



Partial view of De Laval Dairy machinery and James barn equipment at Western Washington Fair.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

EDWIN PETTETT Dungeness, Wash.

### Registered Jerseys

BERKSH  
SWINEIE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

A. G. WOODWARD

Route 1, Box 12

Fairbanks, Wash.



dangerous. Its composition makes it a most suitable medium for the reproduction and growth of nearly all species of bacteria.

Milk is composed of water and a number of solids containing all the elements of food necessary for the nourishment of the young, growing animal. The proportions of water and the different solids vary with the different breeds and with individuals of the same breed. The relative percentages of the different constituents of milk vary also from day to day and at different stages of lactation with the same cow.

The average composition of milk is as follows:

|               |        |
|---------------|--------|
| Water .....   | 87.17% |
| Fat .....     | 3.69%  |
| Casein .....  | 3.02%  |
| Albumen ..... | .53%   |
| Sugar .....   | 4.88%  |
| Ash .....     | .71%   |

Total .....100.00%

If milk is drawn under the best sanitary conditions; placed in an airtight, sterile container, and held at a low temperature, it will keep for a long time without any apparent change in its character or composition. But, when produced under ordinary conditions, so that more or less dirt (usually more) gets into the milk, its nature and composition are changed in a very few hours. These changes are recognized in the ordinary souring and curdling of milk and in the development of various disagreeable odors and flavors. They are due to the action of various minute organisms known as bacteria.

#### How Milk Becomes Contaminated With Bacteria.

It is important that the practical dairyman knows how and from what source bacteria gain entrance to milk in order that he may understand how to prevent this contamination. The principal sources of contamination are:

(1) Dust and filth in the barn; (2) The body of the cow; (3) The clothing and hands of the milker; (4) Unclean utensils. It is impossible to produce clean milk in a filthy barn where filthy cows are milked by a filthy, careless milker. Dust and dirt are continually falling into the milk from the dust-laden air, and dropping from the flank and udder of the cow and the clothes of the milker. And, dripping from the hands that have been generously lubricated with foam from the pail, is a rich, brown liquid that would be excellent as a fertilizer, but should have no place in the milk pail that contains the baby's bottle of milk and the butter that goes on the children's bread. The dairyman owes it to himself and family, and to all mankind who use dairy products, to strive to handle milk under as cleanly conditions as he would have other articles of food handled and prepared for his own use. If we could bring ourselves to think of milk as an article of food, we would, no doubt, be more thoughtful of its care.

It is more important that milk be handled carefully than almost any other food. Milk is usually kept for several hours before it is used, and often under conditions that are favorable to the rapid development of bacteria. Under such conditions milk soon becomes unfit for use unless it has been produced with care. Most of our other foods, even though they have been handled carelessly in the kitchen, are rendered comparatively

safe by being subjected to a high heat in cooking that will destroy a large percent of the bacteria present. This food is then placed on the table and consumed while still hot, thus preventing the occurrence of changes and decomposition that takes place in milk that is not clean.

## STOCK

### SHEEP IN COAST SECTION.

Farmers in the Northwestern part of Washington have given more attention to sheep raising than those in the Southwestern part. On San Juan Island sheep have been very profitable. They are kept in well fenced inclosures, provided with ample pasture for grazing and abundant roofing for shelter during inclement weather. They keep in good health, increase rapidly and produce both wool and mutton. A three months old lamb sells for \$5 to \$7. One farmer figures he can make more easy money from sheep raising than from dairying or poultry raising or fruit growing, and to him it seems strange that ranchers in Western Washington do not keep more sheep. In many places logged off land can be seeded with clover and mixed grasses during the early fall for sheep pasture the following year.

The Shropshires are popular in that part of the state being servicable both for their mutton and wool. Many of the Coast farmers will do well to raise more sheep.

### MAKING THE MARKET HOG.

In raising pure bred stock to supply the demand for breeding there are occasionally, pigs in the litters which do not suit our fancy in markings, conformation, head, etc. A pig of this kind is prepared for the butcher. He runs in the woods, comes to the pig house once or twice a day for some grain, (rye or oats, ground and soaked), or for some mangels, carrots, sorghum or kale. We raised the above and sweet corn this summer as our crop. On or about November 15th, we will turn the hogs in on four acres of Artichoke and let them root it all winter. We will feed grain once daily. We put the feeders in the pens for three weeks before butchering, feeding rye, oats and barley and some roots.

At all times of the year we see that the hogs have a dry place to sleep in, plenty of charcoal, salt and lime and clean, fresh water. The hogs rooted in the artichoke field every day last winter, and we consider this the best forage they can get in this section for winter.

The market hog, with us, is a by-product, as we sell most of our pigs for foundation stock. The present year has been a hard one on the hog breeders, on account of the high price of grain, but it now looks as if those who held on to their good sows would have an inning. The farmer who raises root crops and kale, even if he has to buy some grain, can do well with hogs in this climate of the coast section.

JOHN R. MILLER,  
Woodland Farm, Lacy, Wn.

### MATING FOR PROFITABLE HOGS.

The only hog that ever was or will be highly profitable to the farmer says W. J. Crow of Webb, Iowa,

## ALBERS MOLASSES FEEDS

**CANE MOLASSES**—The molasses we use in the manufacture of our feeds is pure cane of Blackstrap molasses, is extremely palatable, much relished by farm animals, and aids digestion. One hundred pounds of cane molasses is equal in feeding value to 100 pounds of corn.

**ALBERS MOLASSES FEED** for milk cows is a combination of Cane Molasses, Soya Bean Meal, Ground Barley and Oat Feed and when fed in conjunction with Alfalfa Hay or good native Clover Hay will keep your cows in good condition and will produce milk.

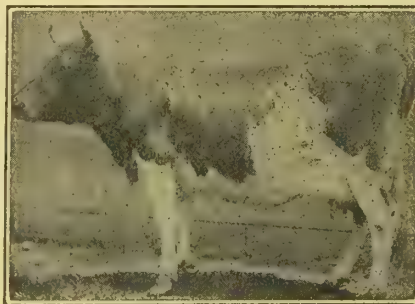
**ALBERS BERKSHIRE HOG FEED** analyzes two per cent. higher in protein and a trifle higher in fat than corn, and being a concentrated feed composed of Cane Molasses, Soya Bean Meal, Ground Corn, Ground Kaffir Corn and Ground Barley, is much better and more palatable than straight corn.

**ALBERS PERCHERON HORSE FEED**—a combination of Rolled Oats, Rolled Barley, Cracked Corn, Alfalfa Meal, Soya Bean Meal and pure Cane Molasses. This feed is similar to All Grain Chop, with the addition of Alfalfa Meal, Soya Bean Meal and Cane Molasses which makes the feed more palatable. Horses like it.

Secure these feeds through your dealer or write us direct.

## Albers Bros. Milling Co.

SEATTLE TACOMA PORTLAND SAN FRANCISCO



### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM  
Box 34, Milltown, Wash.

### Chicon Farm Guernseys

A few registered bull calves from heavy producing dams and sired by bulls of the best blood lines. Address

A. L. GILE, Prop. CHINOOK, Wash.

### TOMAHAWK

Registered Guernsey bull, 6 years old, intensely linebred, in the Yeksa family. 5 closest kin have A. R. O. records averaging 625 pounds fat; splendid individual and his prepotency has been demonstrated. Also several young heifers and bulls sired by Tomahawk for sale.

C. G. HENKEL,  
Opportunity, Wash.

### Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock.

Also Registered Ayshire Bull Calves at reasonable prices.

F. I. MEAD,  
524 California Bldg.  
TACOMA, WASH.

### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

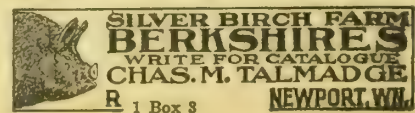
Plateau Farm  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

### "B. K. M. BERKSHIRES"

Bred Gilts, Sows and Boars for sale  
Good pigs \$10.00 to \$15.00 each.

WOODLAND FARM

Lacey, Thurston Co., Washington



SILVER BIRCH FARM  
BERKSHIRE  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 8 NEWPORT, W.V.

### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

ALBERT C. HERRE  
Route 1 Everson, Wash.

**GOOD REGISTERED BERKSHIRES** —  
Choice pigs, \$10 each at weaning time.  
W. D. GOOD, Mt. Vernon, Wash.

### REGISTERED Berkshire

FOR SALE—Boar, 2 years old. Will trade for boar of equal breeding. Also 8 weeks old pigs from Registered stock.

R. H. KELCYNKE  
SYLVAN, WASH.

### Registered Duroc Jersey Hogs

Thrifty, prolific strain. Bred sows for autumn and winter delivery.

J. Hanks & Sons Ellensburg, Wash.

**For Sale Duroc Hogs**  
Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.  
H. A. SIMONDS  
Bothell, Wash.

**AT STUD**—Pure bred Swiss Toggenburg buck, King Solomon No. 258 A. M. G. R. A. Write for service fee. M. P. EGGERS, R. D. 3, Tacoma, Wash.

### JERSEY CATTLE=DUROC HOGS

Spring pigs, April farrow, for sale. Boars \$12. Sows \$15. Registered.

DAVID C. DILWORTH,  
Buckeye, Wash.

**FOR SALE** — Pure bred Duroc Jersey Pigs, quick growers, mature early; \$10 at weaning time. GEO. W. HAYTON, Mt. Vernon, Wash. R. 3, Box 73.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,  
Box 56 Underwood, Wash.

IMPORTED AND HOME-BRED ENGLISH SHIRES AND PERCHERONS ALSO O. I. C. SWINE

Stock of All Kinds  
Guaranteed Satisfactory  
And Prices in Reach of All  
A. L. Pierce Granger, Wash.



## Franquette

Grafted Trees  
on  
Black Walnut

Two thousand Franquette and Mayette trees in different sizes. Stock and strain of highest quality.

Table Grapes, strong vines, olives, almonds and other stock. Write for list and prices.

Write

**TABLE GROVE NURSERIES**  
Healdsburg, Calif.

in Swine Herd, is the one that will grow when fed for growth and fat, at any time he sees fit to fatten him. In breeding this kind of hog, he must have size and room enough to properly assimilate his feed and bred from ancestors that have thrift and growth by inheritance; as feed will bring an animal up to the point nature intended him but no further. It is impossible to get something out of a place, if it is not there; so it takes careful thought and study and experience in mating for the best results. Just mating two families together because they are popular is no sure sign of success. The most profitable hog is the one that puts on the most pounds of weight for the feed consumed and carries the form to suit the market for the highest price. He does not have to be a small hog for these requirements, but he must be a hog that will carry finish and be capable of meeting the demands of the market at whatever weight the market demands.

### TWENTY-SECOND ANNUAL SHOW.

Tacoma will hold its 22nd annual show beginning December, 28 to January 1. This show will be a little different in many ways from our former efforts. We have listed a schedule of premiums that are as good as any offered by the poultry association of the country. This season we are going to double the premiums on all varieties where a hundred or more fowls are shown. Last season 122 Buff Rocks were exhibited as well as 118 White Wyandottes, this shows that the fowls are to be had and we want all of the popular varieties to come out this season in as large numbers. The entries for the Tacoma show will close December 20, giving the secretary plenty of time to correct any errors that might come up in the entries and also time to have the coops ready with their tags and everything for the fowls on their arrival. This saves a lot of work when the fowls are cooped and gives the superintendent time to get your birds in, feed and water them on their arrival. We are giving an early notice to all intending exhibitors. You know just what is expected of you so please take notice and have your entries in on time. If there is anything you do not understand about our rules or about our premium list write us.

WILLIAM SHEPHERD,  
Sumner, Wash.

### STOCK SHOW TO

BE ATTRACTIVE.

Indication continue to point towards a great collection of the finest

## The Scandinavian American Bank

OF TACOMA, WASHINGTON  
With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail



**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
*C.F. Lansing Prop. Salem Ore.*

**LARGE PEAR CROPS**—There is a general impression that the North Pacific Coast section will become famous for great crops of pears. Some large commercial orchards and many small tracts are being planted. When selecting trees remember we have the stock which will give satisfaction.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

**QUAKER NURSERIES**  
Good Agents Wanted.  
C. F. LANSING, Prop. SALEM, OREGON

**Christopher Nurseries**  
Wholesale and Retail

**Nurserymen for Four Generations; 25 Years in Present Location**

From this experience we are producing stock which afford planters the very highest measure of satisfaction; carefully grown, free from disease.

Varieties complete of **APPLES, PEARS, CHERRIES, PLUMS, PEUNES**, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

**ORNAMENTALS**—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce, Retinosporas, Cypress.

**JOHN A. STEWART & SON, Props.,**  
Christopher, King Co., Wash.

**FRUIT AND POULTRY**

We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature.

Twenty years of satisfactory service to growers our best recommendation

923-5 Railroad Ave. CHAS. UHLEN SPOKANE, WASH.

**PULLETS WANTED**

Those who have good pullets of any of the standard breeds to sell in quantity lots of 25 up to several hundred will please write particulars.

**J. L. CRAIB,**  
1022 Western Ave.,  
Seattle, Wash.

**-TANCRED-**

**THE TRAP NESTED WHITE LEGHORNS**

TRAP NESTED CONTINUOUSLY SINCE JULY, 1905

**BREEDING STOCK**

HENS--PULLETS--COCKERELS  
Send for Price List

THE TANCRED FARMS - - - KENT, WASH.

## ONE ARM MAN PULLS BIG STUMPS

With "K" Hand Power Machine, C. A. Hines Makes Good Money Clearing Land.

Crippled through the loss of his right arm in a sawmill, Mr. C. A. Hines, who owns a farm at Bellevue, Wash., has demonstrated that he can pull any stump on his land with his remaining good arm. His best record was two and a half acres of stumps pulled and piled ready for burning in only 24 working days. Included were some of the biggest, deepest-rooted firs that grow in this part of the country.

No sooner had Mr. Hines gotten his land cleared—in fact, before he had completed the work—he had an offer to lease it to an experienced truck and berry farmer for a period of six years. He grasped the opportunity. The leaser pays him \$300 a year for his tract of fifteen acres, making a total of \$1,800 for the six years, or \$300 more than he originally paid for the land itself.

Mr. Hines, who is employed as a bookkeeper for a British Columbia milling company, was laid off when the mill closed down, and, instead of remaining idle, he put his time to good use by clearing his land. He had purchased this 15 acres several years ago.



Pulls Any Stump Alone.

"I can pull any stump alone with the 'K' Hand-Power machine," says Mr. Hines, "for I find that my one arm is all I need."

"When I started to clear my land, some one told me I didn't need any stump puller. They said I could just shoot the stumps and then burn them. I soon found that this was no way to do. No one can clear land properly by burning the stumps, because it leaves roots in the ground and then you are constantly striking them with the plow and having all kinds of trouble."

"After giving up the idea of burning the stumps I saw an advertisement in a farm paper of the 'K' Hand-Power Stump Puller, and I decided to investigate it. After investigation, I was fully convinced that this machine was what I wanted, so I bought one. Now I am mighty glad of it."

"The best thing about the 'K' is that you can get in any position with it, on any kind of land, no matter whether it is hilly or level, wet or dry—and it does the work."

### His Neighbors Are Interested.

"Several of my neighbors who have horse-power machines were skeptical about mine. They didn't think it would pull the big stumps in this part of the country. They soon changed their minds, however, when they came over to my place just to see the 'K' work."

### Marvel at Its Power.

"Many people who have come along the road while I have been clearing have stopped to watch the 'K' work—and all have marveled at its great power. They say it is just what they have been looking for, and they are going to have one."

"You are certainly doing the work right, old man," said one of my neighbor farmers while watching me at work. "I wish I had had sense enough to get one of those pullers. I burned my stumps out, and now when I plow the ground I strike roots every few feet."

"All of the farmers around this section who have watched me clearing now think that the 'K' is the only machine to use. It certainly is the thing to have if you want to clear land, and you want to do it right."

livestock in the Northwest to be exhibited at the Cascade International Stock Show. A letter from Mr. Harry L. Summers, one of the most prominent livestock breeders of Montana, states that their association expects to show a carload of sheep,

and that individual members will show a carload of hogs, two carloads of Shorthorns and possibly one or two carloads of Herefords. This makes the prospective that owners of between thirty-five and forty carloads of high class animals have

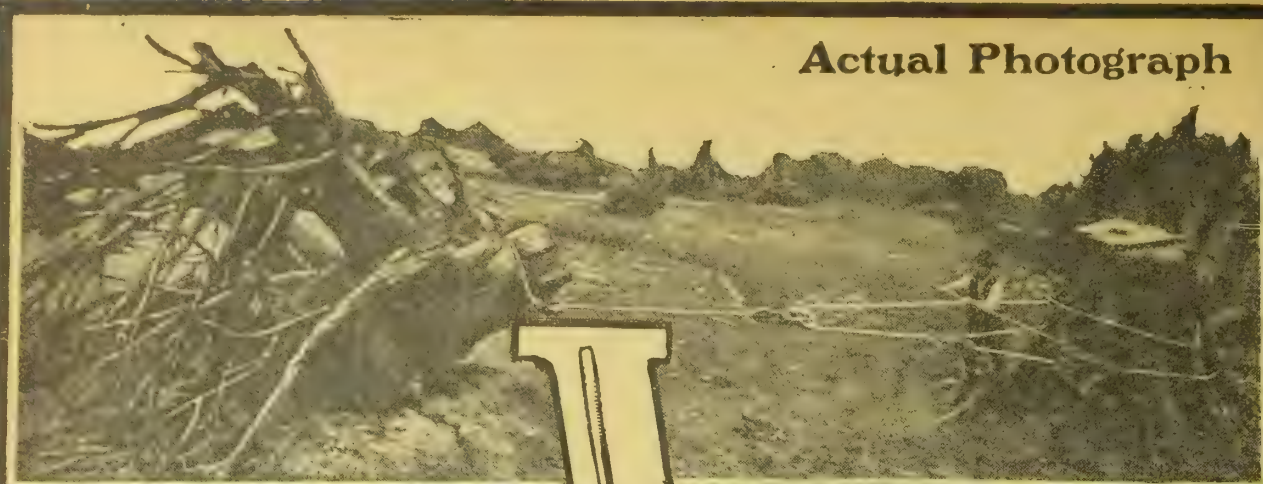
signified their intentions of exhibiting at the Cascade International Stock Show at North Yakima, Nov-22nd to the 27th.

(Premium list on application.)

S. B. NELSON,  
Secretary.



## Actual Photograph



**MAKES  
LAND CLEARING  
EASY**



**"K" HAND-  
POWER  
STUMP  
PULLER**

*You can pull the biggest stumps, like rowing a boat, with the marvelous "K", Hand-Power Stump Puller.*

One man at the handle can pull 96,000 lbs., or 48 tons. *Think of it!* This is more power than 16 horses, or a 9x10 "Donkey" engine can develop on a straight line pull. With the "K," land clearing becomes an easy, one-man, spare-time job.

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**CLEAR YOUR STUMP LAND  
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ADOPTED AND USED BY U.S. GOV'T., whose officials say: "It's a Wonder." Also used by many States and Counties. I have pulled 3,000 immense stumps with it, with-

out help! It will pull any stump that a 1-inch cable will hold. Made of Krupp steel. Built to last a life-time. Absolutely guaranteed. Works on any kind of land, dry or wet, hard or soft, hilly or level. Weighs only 171 lbs. Easily moved and handled by one man. Send for my special money-saving offer, valuable free book on land clearing, and actual guaranteed photographs of the "K" in operation. Write today.

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**CATALOG AND GUIDE BOOK ON ORNAMENTAL  
PLANTING FREE**

Full of helpful suggestions to make your place beautiful.--It's up-to-date, Instructive. Please mention this paper and write to,  
**J. B. PILKINGTON, Nurseryman**  
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**Beautiful Flowering Shrubs Free**

As a practical demonstration of the Philanthropy of Nurserymen we have arranged with one firm to supply 100 Hydranges at such remarkably low rates that we can afford to give one plant postpaid, free to any subscriber, new or old, who sends \$1. for 3 years credit.

The *Hydrangea Paniculata Grandiflora* is a grand, showy and attractive plant, lasting in bloom from July until October. Without question it is the finest, hardy fall blooming shrub, growing from 7 to 10 feet high and blooms profusely.

The flowers are pure white, afterward changing to pink and are borne in immense clusters, a most desirable shrub for home grounds. This plant which would cost delivered, 75c is given absolutely free on receipt of \$1 to pay for 3 years subscription.

Bear in mind that our subscribers are many and only 100 plants are offered of this kind so do not delay to be sure to avail of this splendid offer.

**NORTHWEST HORTICULTURIST & DAIRYMAN**

Inclosed please find \$1 to apply on subscription for 3 years, to include your gift of one Hardy Hydrangea.

Name .....

P. O. ...., State .....

**TWENTY-SECOND ANNUAL SHOW  
TACOMA POULTRY ASSOCIATION**

William Shepherd, Secretary, Sumner, Wash.

Fred A. Johnson, President, Tacoma.

W. M. Coats, Judge.

Entries close December 20, 1915, and birds must be in the show room December 27, at 8 p. m.

Premiums on all varieties doubled where there are more than one hundred fowls entered.

Premium list and entry blanks sent for the asking. Don't wait but write at once.

Be sure and enter some of your fowls if only a trio. Help to boom your breed by making a large entry.

Come and spend the week in the show room.

Banquet Friday evening.

**FOR SALE**

Twenty to one hundred acres near Snohomish which has one of the best Industrial High Schools in the state. On R. F. D., good road, good location, good soil, well watered. Would make a fine dairy or stock farm.  
**D. F. SEXTON, Snohomish, Wash.**  
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Westfold Farm thoroughbred registered Angoras. Choice stock at low prices. Also high grade Toggenburg milch goats from noted thoroughbred buck "Plan-chon" A. M. G. R. 497. Address

**DAVID WHITCOMB,**  
Arcade Building, Seattle

**TWO WATERFRONT ACREAGE  
BARGAINS**

20 acres; 80 rods waterfront; \$1000; 160 acres; 300 rods waterfront; \$5000; well improved farm; good soil; principals only reply; reasonable terms on both tracts. **B. H. DIXON, Adelaide, Wash.**

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. **C. C. BUCKINGHAM, Houston, Texas.**

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. **D. F. BUSH, Minneapolis, Minn.**

**THORNLESS MAMMOTH BLACK-**berry plants, largest blackberry grown, early and prolific bearing, hardy, fine flavor, few seeds. **J. N. REDDEN, 901 Taylor St., San Francisco, Cal.**

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The U. S. Government has adopted the Vim for

postal service after exhaustive tests. The Bell Telephone Co. has over 30 in daily use. For farm and dairy work it is the only practical car. Twenty H. P. long stroke motor, 35 H. P. gears, oversize tires, Stromberg carburetor, high tension magneto, 12-inch brakes; seven different types of bodies. \$775 to \$895 delivered. Write for other details.

**STANDARD MOTOR CAR CO.**

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Hardy Ornamental  
Nursery Stock, a  
Specialty

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Rose Bushes, fine assortment in two-year and three-year sizes. Berry Plants of all kinds. Send for price list.

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**PUYALLUP, WASH.**



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., OCTOBER, 1915

No. 10

## NORTHWEST RURAL SYSTEM.

With every week and each succeeding month there is noted progress in a movement to line up with the northwest rural system which will serve for the mutual benefit of the individual producers who participate and for the community or district as a whole.

This system includes the standardization of the leading crops which are produced for the commercial markets, a high quality of product, uniform marketing packages designed to meet the wants of the markets into which they enter and the cooperation of producers among themselves to unite under a general head for the business of selling.

Determined to keep up a high quality of cream delivered to their creamery the Co-operation Association at Roy has offered a cash prize of \$10 to the patron who delivers cream of the highest average scored of purity for the next month and the incentive is to be continued. That is working at the right direction.

The co-operative creamery at Enumclaw commands 10 cents per gallon premium on their out-put because their association has reached to the point where the cream brought in by the combined membership is of a high, uniform, dependable quality. The creameries at Ferndale, Arlington, Chimacum, Ellensburg and in several other localities are making butter of a uniformly high score preparatory for the export trade which will begin to develop by another year, and they are rewarded even now by highest market prices.

The important feature to be developed in the rural system, at the present time, is to have fixed standards in view and for the thousands of

dairymen, poultrymen and fruit growers, each and all to work untiringly for the attainment of these definite objects.

A leading butter and egg merchant of Seattle recently received a very large order for eggs from Alaska. He wanted infertile eggs, uniform in size and color. If the time to fill this order had extended over 30 or 60 days possibly it might have been done by gathering from the leading poultry section in the northwest, but immediate attention was required. So the order was placed and satisfactorily filled at Petaluma. There hundreds of poultrymen have been conducting their poultry plants according to uniform methods, based on the requirements of leading markets. Thus they have a system and are adhering to it. In the northwest progress is being made in the same direction. At Kent, Spanaway, Roy, on the various islands, and shores of Puget Sound eggs of uniform size, color and a high, definite quality is produced because the many individual poultrymen are working systematically with specific objects in view, and by another year eggs in considerable quantity will be available here for rush orders.

At the butter makers scoring contest, Washington State Fair, about 25 per cent. of the entries ranked from 90 to 95 points indicating that 75 per cent. of the butter made by the creameries represented could be improved without placing unnecessary burdens on those of the individual dairymen who are not adhering to practical sanitary methods. Education is gradually doing its work through the state dairy department and the college officials. Judicious police power is also being brought into play on the part of the state but

principally in cases where inexcusable carelessness prevails.

It is to the interest of the individual dairyman and poultryman to line up with organized efforts for a high uniform quality of product in order to attract a dependable market sufficient to afford a reasonable profit margin.

The fruit growers of the northwest have adopted methods insuring a dependable pack and they have organized the growers council to centralize their power for the business of selling. While it may take a year or two to perfect workable plans and methods this form of co-operation among fruit growers, is necessary for their own protection and profit, while not antagonistic to the interests of those who handle the business of marketing according to both the commercial and the statutory laws of trade.

Another feature embodied in the rural system is the standardization of by-products.

Evaporators by the hundreds will soon find their way into the apples and pear districts. There will be large quantities of boiled down cider and apple butter, Loganberry juice and red raspberry shrub all manufactured here in the northwest. The system cover numerous operations which are already well under way and a large volume of products can be marketed profitably for the producers when they continue working together and adhere strictly to the conditions which the business of commercial marketing requires.

## CATTLE SHOW LARGE.

Panama-Pacific International Exposition.

The fear felt several months ago

that the re-appearance of foot and mouth disease in several localities would threaten the success of the cattle show this autumn at the Panama-Pacific International Exposition at San Francisco has been dispelled by the abatement of the outbreak, the easing of the quarantine nearly everywhere and the resumption of shipments. The California State Veterinarian has not relaxed his vigilance and will take no chances that might result in the introduction of the scourge into California, but there is enough free territory to guarantee a great show. The number of entries received by the Exposition Department of Live Stock gives assurance of a large and varied exhibition of both beef and dairy cattle from October 18 to November 1, the cattle show period.

Already several interesting herds are on the grounds, such as Shorthorns, Guernseys, Herefords and Holstein Friesian. Others that will arrive before the show opens will be Aberdeen-Angus, Galloways, Polled Durham, Red Polled and Devons in the beef classes, and Jerseys, Ayrshires, Dutch Belted, Brown Swiss, French Canadian, Simmenthal, Kerry and Dexter in the dairy classes.

The judges have been selected with great care. Thomas Dempsey, Westerville, Ohio, will judge Jerseys; Elliott, Davis, Lincoln, Nebr., Red Polled; Judge Calvin Ewing, Youngstown, Ohio, Galloways; Charles L. Hill, Rosendale, Wisconsin, Guernseys; M. A. Judy, West Lebanon, Indiana, Aberdeen-Angus; Phil. C. Lee, San Angelo, Texas, Herefords; Hugh Van Pelt, Waterloo, Iowa, Ayrshires; W. H. Standish, Lyons, Ohio, Holsteins; Captain T. E. Robson, London, Ontario, Canada, Shorthorns.



First Prize Holstein Herd of Van Woerden & Fisher at Western Washington Fair, Puyallup, 1915.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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Correct forms of co-operation im-  
plies square dealing and efficiency on  
the part of all members and gives  
business enterprises nearest by the  
first opportunity for service.

The selling agencies cannot for their  
own good, overlook the fact that their  
true position is that of a servant to  
the producing body of fruit growers  
who are organized in the form of  
growers council.

Fall sowing of the various grass  
seeds continues more briskly among  
farmers in the northwest since cop-  
ious rains have loosened up the soil.  
Seeding of vetch with some one of  
the cereal grains will continue up into  
December.

Great preparations are being made  
for the Cascade International Stock  
Show to be held at North Yakima  
next month. Much high class live  
stock will be centered and an oppor-  
tunity afforded buyers to select, at  
their own prices, from the best to be  
obtained in pure breeds of the different  
classes catalogued. Many will attend  
for the educational advantages to be  
gained.

## MUTUAL SELF HELP.

"True, co-operation is the quickest  
way to success for the humble as  
well as for the high, but its literal  
interpretation is organized mutual  
self-help," says Myron T. Herrick. It  
presumes that men will work harder,  
longer and better together than when  
standing alone; it requires a spirit  
and an ability to both give and re-  
ceive; and it can reach its fullest de-  
velopment only among persons who  
are capable and honest, and known  
to be so—among persons who ask no  
favors, who spurn charity and state  
aid, and rely solely upon their own  
talents, toil and resources.

## THE GROWERS COUNCIL.

An exchange remarks that the sell-  
ing agencies are handling a smaller  
proportion of the apple crop of the  
northwest than usual on account of  
more direct buying on the part of  
eastern merchants, and seem to infer

from this that the growers council is  
not rendering the full measure of ser-  
vice for which it was organized. The  
scope and purpose of the council is  
not to enter the details of selling so  
long as prices are satisfactory and it  
is up to the selling agencies to handle  
so much of the product as they can,  
satisfactorily to themselves and pro-  
ducers. When prices are off as with  
the peach crop then the growers coun-  
cil will perform a very important func-  
tion. A representative of the Nor-  
thern Pacific Railway estimated that  
from four to five hundred cars more  
peaches were shipped from the Yaki-  
ma Valley because of the council than  
would have been moved without that  
organization.

## LIMESTONE AND FERTILITY.

The article on Ground Lime Stone  
in this issue written by Henry Bucey  
is timely, of exceedingly great value  
to the farmers of the coast section  
and therefore is given prominent  
position. Mr. Bucey was the original  
editor and for some time the pro-  
prietor of the Northwest Horticultur-  
ist which was established in 1887. He  
is well known to many of our older  
readers through services in the pro-  
motion of the fruit industries, and  
during the last few years he has made  
careful study of the underlying prin-  
ciples of soil fertility.

Many of our readers have known  
the great value of lime application  
in the production of clover, vetch and  
many other crops but considered the  
cost out of reach. Leading manu-  
facturers of ground limestone in  
Washington are now putting it on  
the market at figures which our  
readers say is fair and practical  
for use on the land.

## UNIFORM HORTICULTURAL LAWS.

The Uniform Horticultural Law  
propaganda has at last taken root in  
Wisconsin where a model state hor-  
ticultural inspection law has been  
drafted by Prof. J. G. Sanders, of  
Madison, who is also secretary of the  
American Association of Economic  
Entomologists.

This is an excellent sign of nation-  
al cooperation on the part of state  
officials, nurserymen and fruit growers  
and there is substantial evidence that  
the efforts of the Pacific Coast Asso-  
ciation of Nurserymen, under the  
leadership of M. McDonald, Geo.  
Roeding, S. A. Miller, A. Brownwell  
and others prominent in the move-  
ment will bear fruit.

When the inspectors, the growers  
and propagators of trees and plants  
fully realize their interests are mutual  
then it will not be difficult to prevail  
upon the legislature of the different  
states to enact laws uniform in prin-  
ciple.

## THE FAIRS.

The district, country and state fairs  
of 1915 were with scarcely an excep-  
tion of a high order. The exhibits  
of live stock were particularly pleas-  
ing because of clean and good show  
shape appearance and for the high  
quality in every class. The machin-  
ery exhibits were also far better than  
usual particularly in automobiles, the  
various styles of gasoline engines,  
dairy equipment including milking  
machines, tractors and stump pullers.

As a rule there was an absence of  
fakers and the undesirable "tin-pan"

side shows. The women's and chil-  
dren's departments made most ex-  
cellent showings and attracted much  
attention.

The State Fair at North Yakima  
was well handled by Secretary Mere-  
dith. Both exhibitors and the visi-  
tors, generally, were highly pleased,  
and the quality and arrangement of  
exhibits were more than praise-  
worthy. The attendance while good  
on certain days, should have been  
thrice the actual total. Besides the  
backward business conditions gener-  
ally prevailing there were too many  
small local fairs throughout the Yaki-  
ma Valley near the state fair date.

The people of central Washington  
should be loyal in supporting the  
State Fair by showing up in good at-  
tendance if they would have it con-  
tinue further development at this  
point. A large local attendance is  
always essential for a successful fair  
and loyalty merits support from other  
sources.

The Western Washington Fair at  
Puyallup as usual was unique and  
highly attractive in every respect.  
The limited space for livestock was  
filled with show animals of excellent  
type. The vegetable and fruit ex-  
hibits surpassed that of any previous  
year.

The poultry as usual was displayed  
in large numbers, high scoring types  
and attracted much attention. The  
experiment station exhibits were ex-  
ceedingly well defined, highly instruc-  
tive and very pleasing in appearance.  
The school children's industrial ex-  
hibits were very complete, interesting  
and their work as a whole commend-  
able.

The floral display was shown in a  
large tent very choice and profuse of  
all fall flowering classes. This fair  
as a whole was highly educational  
and attractive to all visitors. The  
arrangement of buildings is such that  
the crowds can be comfortably hand-  
led regardless of weather.

Free admission of children on the  
day set for that purpose was greatly  
appreciated. It was generally con-  
sidered "a good day in school" at the  
fair during their attendance. The  
management has planned well and  
spared no efforts to complete every  
detail necessary for a successful  
event and had there been bright  
weather throughout, attendance would  
have eclipsed all past records.

The State Fair at Salem, Oregon,  
as usual was a hummer in live stock  
exhibits. The live stock breeders  
of the northwest, particularly of the  
Willamette Valley realize the splen-  
did natural opportunities here pre-  
vailing to attain the best that is pos-  
sible in the breeding of live stock and  
they respond generously to the call  
for exhibits.

While the sale of cattle was a little  
slow at all these fairs there was con-  
siderable inquiry with a view of fu-  
ture buying. Sheep sales were num-  
erous while there was but little de-  
mand for breeders in hogs. They can  
be bought cheaply and now is a  
good time to purchase for those who  
can produce feed economically.

Much valuable information has been  
obtained by close observing students  
attending the fairs in the Northwest  
this season and the pleasure of hav-  
ing taken part in the up-building of  
the community is a greater satis-  
faction.

## THE WORMY

### APPLE PROBLEM.

The apple growers it appears, have  
a larger per cent. of wormy apples  
on hand this season than for several  
years past, in the leading commer-  
cial apple districts of Washington.  
Owing to general depressed conditions  
perhaps spraying was not so thor-  
ough as usual. Some of the growers  
also contend that there was more  
over lapping of the broods and that  
in some cases the first spraying was  
not done at the proper time. As a  
result much pressure has been  
brought to bear by certain growers  
and shippers on the Horticultural  
Commissioner to obtain permission  
to ship wormy fruit. This step the  
Horticulturist believes to be a mis-  
take. It has cost the state and the  
fruit growers a vast sum of money  
and much energetic work to establish  
a reputation for sound, clean, depend-  
able fruit, properly sized and put up  
in standard packages. To deviate  
from this high standard is a step  
backward which will be very difficult  
to retake and overcome. A few years  
ago a leading fruit grower at Toppen-  
ish was fined for attempting to ship  
wormy fruit out of the state. He  
lost money. This year under a more  
rigid law a neighbor pleads he will  
lose money unless permitted to ship  
wormy fruit. Why should there be  
inconsistency to favor one and not  
the other, even though a larger num-  
ber are caught with infected fruit  
this year? Why not solve the prob-  
lem in the manufacture of more fruit  
by-products. Hundred of evaporators  
should have been installed, the af-  
fected parts cut out and good clean  
dried apples put on the market to  
supply and further develop that class  
of trade. Now is the time to evapor-  
ate and develop the by-product line.

## FALL PLANTING OF SHRUBS.

October and November are good  
months in which to plant all kinds  
of flowering shrubs in the coast sec-  
tion. Native rhododendrons, lilacs,  
syringas, holly, hydrangea, labernum,  
laurels, peonies, roses, snowballs,  
spireas and the different evergreen  
shrubs can all well be planted in the  
fall in this humid climate, and when  
the work is properly done they get  
an early start in the spring.

In many farm homes on the Pacific  
Coast the plan for ornamentation  
includes a careful selection of the  
different flowering bulbs, some deci-  
dous shrubs for succession of bloom  
during the season. When these are  
once planted then a wealth of bloom  
may be afforded with but little labor  
to keep them in shape. A small  
open space for a green lawn and  
smoothly kept is included in the  
plans for a beautiful home yard on  
the farm.

Make the plans now for beautify-  
ing the home ground.

The difference between a well kept  
home yard and one which is not at-  
tractive is far less a question of the  
cost or the labor involved, as it is  
a need of some plan or some ideal.  
Get copies of catalogues of nurs-  
erymen, seedsmen and bulb plant grow-  
ers, and after looking over the lists to  
arrange for the seasonable blooming  
and adaptability of different plants,  
you desire further assistance, feel  
free to write any nurseryman or  
landscape gardener. Their services  
are generously available to those who  
show some desire to beautify their  
home grounds.



## MAKING HOME SURROUNDINGS BEAUTIFUL.

Anticipating a general forward movement for beautifying the home surroundings with trees and plants arranged for the most pleasing effects the different nurseries are now giving more attention to a Landscape Department.

The Oregon Nursery Co., Orenco, Oregon, has recently employed for the head of this department Mr. H. E. Burdette, a graduate of the State College, Pullman, Washington, practical in landscape work, and will be prepared from this time forward to give special attention to any request for information about landscape work.

This firm has issued some good literature on roses and on walnut trees which may be obtained on request.

## TRANSPLANTING WALNUTS.

The trees should be planted a little deeper than they stood in the nursery, slightly leaning to the prevailing wind. Trim all the roots just before planting and keep them moist. Have the holes larger and deeper than the length of the roots, fill in with top soil, place the trees, spread the roots in their natural position, press the earth firmly around the roots in filling the hole.

Plant trees grafted on one year old roots to insure success. Older roots are difficult to start after transplanting.

You will make no mistake in planting Walnuts as the supply will not meet the demand for many years to come.

"We import annually from European and other countries, 32,000,000 pounds of English walnuts, and one and one-half times as many as California has produced in the year of largest crop," says the American Nut Journal.

### Pruning.

In our twenty years' experience in growing and propagating walnuts we have found that walnut trees grow better when properly pruned.

The first year cut the trees back to about 30 inches from the ground and wax the cut.

After that, prune to shape the trees and admit plenty of sunlight and air, also cutting back a little every year until the trees attain a desirable size.

If not pruned, walnut trees will bear nuts very early, but this is not desirable as it tends to dwarf the trees.

S. MAINGUNEAU,  
San Jose, California.

## DEMAND FOR QUINCES.

During the past month there has been some inquiry in the market for good quinces. Those who have surplus fruit of this class to sell will do well to make it known to the Horticulturist office.

Fruit growers having a moist but well drained loamy soil might derive some revenue from the planting of quince trees.

The farmers at Snohomish, Wash., have organized to sell products and to make purchases. Recently it is reported they bought 15 cars of hay and the order went to a local dealer. This is a correct system of co-operation. By getting together they bought at lowest market price because they were properly financed and they gave the home dealer first chance his prices being on a par with actual cost when shipped from producers. This is only one of many transactions in the Northwest Rural system.

## APPLE CIDER SIRUP.

Wash apples and remove all decayed and worm-eaten spots. Press out juice as usual for cider making. Be sure the juice does not ferment or "work," as only sweet cider should be used for sirup making. The sterilizing reducing vat or kettle should be a third larger than required to hold contents.

Add 5 ounces of powdered calcium carbonate to 14 gallons of apple cider. Powdered calcium carbonate (carbonate of lime), commonly called precipitated chalk, is a low-priced chemical available at any drug store. Boil in kettle or vat vigorously for a period of 5 minutes. Pour the liquid into vessels, preferably glass jars or pitchers; allow to stand 6 to 8 hours, or until perfectly clear. Pour the clear liquid into preserving kettle. Do not allow sediment at bottom to enter. Add to the clear liquid one level teaspoonful of lime carbonate and stir thoroughly. The process is completed by boiling down rapidly to a clear liquid. Use density gauge or candy thermometer and bring it up to 220 deg. F., or, without thermometer, reduce bulk to one-seventh of original volume. To see whether it is cooked sufficiently, test as you would sirup or candy, by pouring a little of it into cold water. If boiled enough, it should have the consistency of maple sirup. It should not be cooked until it hardens like candy when tested. When the test shows that the sirup has been cooked enough, pour it into fruit jars, pitchers, etc., and allow it to cool slowly. Slow cooling is important, as otherwise the suspended matter will not settle properly and the sirup will be cloudy.

A good way to insure slow cooling is to stand the vessels full of sirup in a bucket or a wash boiler of hot water.

## OREGON HORTICULTURAL SOCIETY MEETING.

The annual meeting of the Oregon State Horticultural Society will be held, November 16, 17, 18, at Corvallis, Oregon. Col. R. C. Washburn, President, and C. D. Minton, Secretary, are working on the program which will be of much interest to the fruit growers of Oregon and the northwest. Marketing will be taken up and discussed in its various phases, and other subjects vital to the fruit interests in Oregon will be given place in the programme.

## MARKETING SERVICE AND APPLE CROPS.

Complying with numerous requests from the growers' councils, chambers of commerce, growers' and shippers' organizations in the States of Washington, Oregon, Idaho, and Montana, the Office of Markets and Rural Organization of the United States Department of Agriculture has made plans to establish temporary headquarters in the Northwest for the study of the distribution of the 1915 boxed apple crop.

The plan as outlined is based upon assurance that the Office of Markets and Rural Organization will receive the co-operation of all those interested in the apple industry, for without this co-operation the efforts of the Office would not produce valuable results.

It is probable that the field headquarters for this work will be in Spokane, because of the accessibility

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## VETCH SEED

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of that point to the apple territory in the northwestern states.

The work which the Office will do is not that of a telegraphic market news service, but rather contemplates the collection by mail and the compilation of data and issuance of weekly bulletins concerning the shipments and destination of the northwestern boxed apples. In this connection similar work will be carried on to a certain extent in the apple section of Colorado, Utah and California.

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to sell our complete line of roses, flowering shrubs, shade and ornamental and fruit trees and small berry bearing plants. We teach you how to sell, furnish a complete outfit and pay some weekly. Our representatives are making big money. No experience required. Write at once to Ornamental & Fruit Nursery Co., Box 217 Wapato, Wash.

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**POTATO SEED.**

Have you a good crop of blight free, smooth mealy potato? Then by all means dig and store, for seed for there will be a scramble for good potato seed of known varieties in the northwest next spring. And there is a chance to make some easy money for the wide awake grower who will specialize in seed potatoes.

Grow with that particular object in view. There must be thorough preparation, proper care in growing and harvest as soon as the tubers are mature. Some good suggestions are given in Farmers Bulletin 533 U. S. Department of Agriculture, Washington, D. C., free on application.

**MARKETING.****Some Causes of Losses and Wastes.**

With the perishable nature of a large part of the fruits and vegetables marketed there must be some loss. This often totals higher than the farmer realizes. For instance, according to the U. S. Department's market specialists, in Bulletin No. 267, the loss on such commodities as strawberries, peaches, and grapes, sometimes amounts to 30 or 40 per cent. before they reach the hands of the retail trade. Losses due to spoiling may be the result of the shipper's sending overripe or diseased fruit, or failing to give proper attention to packing, to loading, or to bracing the packages in the car. Sometimes the railroad is at fault. Delay in transit, improper ventilation or refrigeration, or unnecessarily rough handling of cars may contribute to rapid deterioration of the shipment on arrival.

It is always well to bear in mind the really serious side of losses and wastes. The spoiling of a dozen cantalopes, a basket of grapes, or a crate of strawberries represents an absolute loss to the community. No benefit accrues to producer, distributor, or consumer from such a condition. The loss occurring at this point must be borne by both producer and consumer, and in a great many cases the distributor must bear his part of the burden. The Department's specialists think in many cases losses and wastes are entirely too heavy a tax on food distribution and that the elimination of unnecessary wastes would do as much toward effecting permanent, substantial economies in marketing and distributing as any readjustment of present marketing methods could do. The fact that a large percentage of these losses can be avoided by proper grading, packing, and shipping, together with prompt, efficient handling while the goods are in process of distribution, makes it imperative that this subject be given special consideration by those interested in the efficient marketing of farm crops.

A better understanding by the farmer of the complex marketing machinery would enable him to intelligently choose between the many channels through which his fruits and vegetables might be marketed. The new bulletin aims to make clear to the layman the rather intricate machinery of the market and deals with methods of receiving, inspection, rejection, terminal distribution and sale methods, the broker, auction sales, carlot wholesalers, commission merchants, jobbing sales, public markets, etc. This bulletin may be had

free by those interested upon application to the United States Department of Agriculture, Washington, D. C.

**PEAR PICKING AND PACKING**

Pears should be picked while hard, but not before they are grown to a good average size under normal conditions. By picking the largest first the remaining part of crop can be left for a few days to increase.

Two or more boxes should be used in packing pears.

Always pack direct from box into which fruit has been sorted, never from a canvas table.

Bartletts and Flemish Beauties should weigh when packed and nailed up, fifty-two pounds. A variation of from fifty-one to fifty-three pounds is permissible if pack is good.

The Clapps Favorite, which is a lighter pear, should weigh, when nailed up, from forty-nine to fifty-one pounds nothing under forty-nine pounds should be accepted by nailer. Those over fifty-one and not to exceed fifty-two pounds may be accepted if pack is good and lid will go on without cutting or mashing fruit.

Buerre de Anjous and Comice should weigh from forty-eight to fifty pounds.

Winter Nelis should be packed five tier deep, never six. The smaller sizes will be light, often not over forty-six pounds, but are acceptable if the pack is tight.

The weight of the packed box should be regulated by the firmness with which pears are placed in the tier.

The large 3x2s and 3x3s should be packed loosely while the smaller sizes should be packed tightly. All 4x3 packs should be tight.

Care should be taken by nailer not to cut or crush any of the fruit along the edges of the box; all such fruit should be removed and replaced by good pears.

The proper way to place pear in the box—in starting the tiers of any pear pack, the first row along the end of the box should be laid with the blossom end of fruit toward the end of box, and with the stem pointing directly away from the packer and slightly down; the remaining pears of each tier should be so placed that the stem will be pointing directly toward packer and slightly up. Never line pear boxes.

The first tier should always be packed with the smooth wrap of the paper down, that is, the bottom of the box should always be faced so that the nailed up box will present a neat appearance.

The 3x2 pack, 3x3 and the 4x3 should be used in the packing of pears.

The 3x2 pack. All 3x2 pear packs should be four tiers deep. Start the pack with three pears, placing them in the lower end of box in such a way that there will be one in each corner and one in the center. Place the next two in the spaces provided by the packing of the first three, continue pack in the same manner until the tier is finished, remembering always to keep spaces the same size and the alignment perfect. Pack second tier over first tier spaces, third tier over second tier spaces, and fourth tier over third spaces.

(2) The 3x3 pear pack. This pack should always be five tiers deep. In starting three by three pack, place the

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Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

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first pear in lower left hand corner of box, the other two to be so placed that the distance will be the same between the first and second and the second and third as that between the third pear and the lower right hand corner of box. The next three pears are placed in the spaces provided by the placing of the first three, and continue the pack in the same manner until the tier is finished, remembering always to keep the spaces the same size and the alignment perfect. The second tier is to be packed over the first tier spaces, the third over the second tier spaces, the fourth over the third tier spaces, and the fifth or last tier over the fourth tier spaces.

(3) The 4x3 Pear Pack. This pack should always be five tiers deep. In starting the four by three pack, place a pear in each of the two lower corners, the next two to be so placed that the spaces between the two corner pears and the two inner pears will be the same size as the space between the two center pears. Place the three pears in the spaces provided by the placing of the first four. Continue to pack in the same manner until the tier is finished, remembering always to keep the spaces the same size and the alignment of the fruit perfect. Pack the second tier in the first tier spaces third in the second tier spaces, fourth over third tier spaces, and fifth over fourth tier spaces.

#### GINSENG IN PUGET SOUND BASIN.

In the Puget Sound Basin we have 18 years of ginseng culture, showing 11 crops of maturity, which originated from the wild which was brought from the East. The writer has never seen it wild in this State. Yet it does well in some locations.

In medicine it is an alternative, and is used more by the Chinese than all other nationalities. Commercially speaking its exports often equal our quinine imports into this country. I will submit Government reports during the following dates, but those figures do not represent all the ginseng exported as there is no export duty on it and no way to get full returns. But the revenue to this country for dry roots in pounds shows as follows:

| Year | Lbs.    | Amount        |
|------|---------|---------------|
| 1858 | 366,053 | \$ 193,736.00 |
| 1868 | 370,066 | 380,454.00    |
| 1878 | 421,395 | 497,247.00    |
| 1888 | 308,365 | 657,358.00    |
| 1889 | 271,228 | 634,491.00    |
| 1890 | 223,113 | 605,233.00    |
| 1891 | 283,000 | 959,992.00    |
| 1895 | 233,236 | 826,713.00    |
| 1900 | 160,101 | 833,710.00    |
| 1905 | 146,576 | 1,175,844.00  |
| 1909 | 186,257 | 1,210,179.00  |
| 1910 | 192,406 | 1,439,434.00  |
| 1911 | 153,999 | 1,088,202.00  |
| 1912 | 155,308 | 1,019,301.00  |
| 1913 | 221,901 | 1,665,731.00  |

The price per pound in 1858 was 52 cents and has gradually increased until in 1913, when the market was \$7.50 per pound.

Ginseng began to be exported from America about the year 1735. A Jesuit priest who had spent years in China came to Lower Canada and recognizing the plant, gathered some and shipped it and from this grew our present trade. Demand has been very steady, prices on the raise most of the time, during a period of 185 years. Of course, the 1st Century

showed very small amounts and no general statistics could be claimed.

Its native country is in the drainage of the Great Lakes, upper Mississippi, Ohio, Cumberland, Tennessee, and their tributaries, from South Carolina north to the St. Lawrence. Wherever maple grew the hunter would find Ginseng and Golden Seal in certain localities. Both plants are now nearly extinct. Over 80 per cent. of the Ginseng now exported is cultivated; either under artificial shade or natural. It grows slower under natural shade, is the general experience.

#### Experience in This Section.

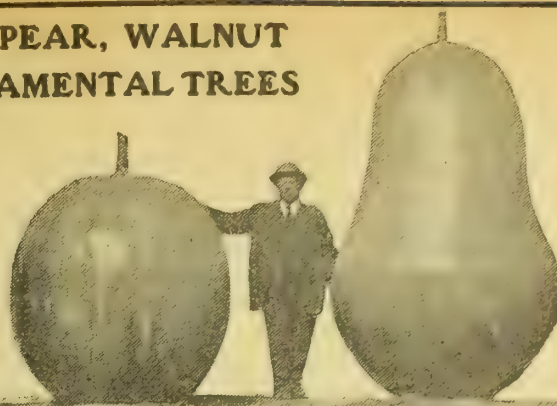
Several years ago the writer purchased the crop of Dry Root from one-fourth of an acre, giving \$4200 for it. I reshipped the root and made a small profit. The age of this stock from 5 years to 14—a few of the oldest roots were originally wild, being kept for seed bearers, as seed at that time was very high and hard to get. The seed "sleeps" one season, coming up the second year. Eastern plants, especially wild ones, do not do well here for a year or two; oftentimes many die and many run out new rootlets from the crown and take nearly all the growth of the plant in later years.

From stratified seed it takes 7 years to develop a matured plant under favorable conditions. Much of the cultivated Ginseng is dug too young, often at 4 to 5 years. This young stock does not bring a high price, nor does it yield nearly as much dry roots in pounds per acre. Ginseng will succeed on much less moisture than Golden Seal; location, altitude and soil are the vital requirements. Frost seldom injures Ginseng, as it belongs in a freezing zone. No commercial fertilizer should be used; leaf mold is its natural nutriment. The greatest objection to Ginseng growing is the long wait for returns, but this can be partially obviated by putting in plants from 1 to 3 years old, as they can now be bought nearly as cheap as they can be raised. No crop that I know of will yield more money per acre when all goes well than Ginseng; conditions must be favorable. Good care is required and knowledge of the soil and climate, where the operation is going on. It has some enemies, the ground mole; I have found its worst in this section. One acre can be set at a cost of from \$450 to \$1800, depending on the shade used, age of plants and seed and the amount of labor expended, the older roots cost more. In drying it loses from two-thirds to three-fourths in weight, owing to age of roots and soil it grew in. Prices now current range from \$2.00 per pound up to \$10.00. Ordinary crops yield from \$6000 to \$16,000 per acre at maturity.

This State produces some very fine roots; the writer has raised samples which weighed 1 pound apiece green and dried, 5¼ oz. This is very exceptional, however.

No amount of writing can give the information about "sang" growing equal to a visit in a garden, where all aged plants are to be seen. I am busy now harvesting one million seed, as near as I can estimate, and will dig a few hundred pounds of Root later. It should be dug soon after the top dies down, as fall dug is much the best and dries away less. No one can future the price, we can only judge from the past, which has

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*C. F. Lansing, Prop. Salem Ore.*

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of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

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## PEAR TREES

Best commercial varieties for Pacific Coast section, choice stock in 1 to 3 years of age and good grades.

Also Plum and Prune trees of the leading marketable varieties. English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

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## Bearing Size Apple Trees

We have some fine 4-year-old apple trees in Wealthy, Wagner, Grimes, Jonathan, etc., which have been frequently transplanted and will bear early when set out. Many of them have borne fruit in the nursery row.

We also have a choice selection of ornamentals including: Roses, Peonies, Delphinium, Daisies, Dahlias, Gladiolus, Tulips, Hyacinths, Lilacs, Spireas, Snowballs, Hydrangeas, Hollies, Cypress and other Evergreens.

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been eminently good. The business is a good, clean, legitimate industry that can be carried out on a small acreage, if location and soil are right. I alternate with Golden Seal—where I dig Sang this year, I plant Seal roots next. My gardens are open to inspection, information freely given—several acres are devoted to sang culture, showing three distinct varieties. There is no great difference except in shape of roots, color and shape of stalks and leaves are slightly different.

Monied values of ginseng are so long and well known, it is useless to write about this; those who have proper location and soil and go at it in a business like manner will surely succeed. The future and possibilities appear good. I have never experienced any difficulty in selling

good mature roots. The young and immature roots are cheap. Time for planting is from the 20th of October until March, in this climate, preferably before any spring warmth appears. There is nothing to the story of great superstition about certain roots. I have met in the last ten years some 30,000 Chinese, many doctors of prominence. Their doctors are highly educated in materia medica, and know what they want when they see it, and are usually willing to pay the market price.

My book on "Additional Plant Culture" for this climate will be out some time in February. In this work soil and the essentials for successful growing of all high paying special crops of medicinal plants, are gone into in detail.—C. E. THORPE, R. D. 1, Box 300, Seattle, Wash.

## AGRICULTURE

## The Basis of Prosperity

**DOES HE EARN WHAT HE GETS?  
DOES HE GET WHAT HE EARNS?**

By W. H. Kaufman

Shall Business Remain A "Sport,"  
Or Shall It Be Made a "Service?"

A good illustration of the "Sport" spirit is a race track. There "to win according to the rules" is the highest type of morality. Of course, one must "play fair;" must keep the letter of the law—but the whole game is to win!

The whole idea of "service" is entirely lacking.

The actual cash involved may be so small as to be immaterial; the point is to win.

We of the forward movements do not overlook the real value of the sporting spirit, which is really great. What we object to is making the necessities of life a mere matter of sport.

A horse race; a jumping contest; any form of sport has its place; but life is too precious to be treated as a pawn in a game of chess!

### Race Course vs. Sick Room

For a fair idea of "service" go to a sick room. Doctors "serve;" the trained nurse "serves." Every slightest action is governed by the thought of "service."

Any manifestation of the self-asserting, boisterous spirit of the race course is forbidden. "Service" dominates even the unconscious movements of every person.

At the book-maker's stand on the race track "service" is as unknown as is "sport" in the sick room.

Go to the owner of a race horse and say "Now you ought to let Smith win this race; his wife is sick and he is hard pushed to meet his bills"—and the man will think and probably say you are a fool! Why?

Simply because the idea of "service" is wholly foreign to the ordinary "sport" so far as the sport itself is concerned.

After the stake is won he will very likely give you all; probably even double it for a man "down on his luck"—but so far as the sport itself is concerned there is no thought of "service."

### Sport Confined to Unessentials.

All work and no play makes Jack a dull boy.

"Sport" has its place; and a very important place it is; but sporting moods must be confined to baubles!

Food, clothing, shelter, homes, life and all the necessities of life must be wholly freed from the spirit and methods of "sport."

Holding the record for broad jumping is quite different from holding a million acres of land out of use, thus forcing thousands into involuntary idleness and consequent want. Men can live quite well without holding the record for the 100-yard dash

—indeed, with one solitary exception, all the earth's teeming millions live without that record—but land each must have on which to stand; air he must have at least every other minute of his life. Food must be had as regularly even if at longer intervals. A home is essential to best citizenship.

After years of agitation the Louisiana Lottery was banished; its circulars and tickets excluded from the mails; yet a large percentage of well meaning people gamble in land and other necessities of life!

Land, like the road, should be held only for use; never as a means of extortion.

### Various "Employment Agencies."

Because employment agencies were sometimes in league with large employers (the employers discharging men the third day, so that the employing agent could get another fee)—because of this outrageous practice the wage-workers of this state abolished all private employment agencies.

But the speculator is infinitely worse than any employment agent that ever robbed a workingman.

The employment agents charged one dollar for a "job;" whereas the speculator charges from \$500 to \$10,000 for a "job," where a man will earn, according to the United States census report, an average wage of \$1.06 a day.

Why not sell the AIR of our state; and then let the "owner" charge each of us for the mere privilege of breathing? Most people in the state pay "rent" for the mere privilege of living in the state.

### Lesson From Europe.

The war is shaking up the sleepers. Many moss-grown superstitions are being exploded.

"No speculation in bread" warns the Italian government; and the gamblers countermanded their orders for 1,000,000 bushels of American wheat!

Australian provinces regulate the prices of necessities. Germany issues bread tickets. Even individualistic John Bull submits to new rules regulating business.

And why not? Speculation is merely legalized theft!

The speculator "serves" not! At his worst he is a sneak thief! At his best he is merely a "sport!"

"Service" is never in any of his thoughts!

Watered stocks; fictitious values; legalized theft!

A child's title to the best possible chance for the best possible life is infinitely superior to any gambler's title to any of life's necessities!

Business must cease being a "sport" and must be made a "service."

## Seeds of Quality

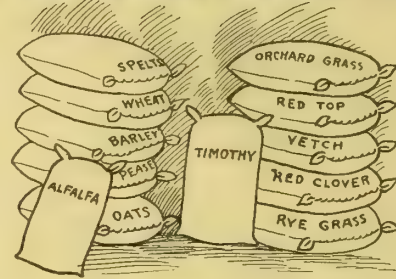
We are better prepared than ever to supply you with seeds for fall sowing. We have a complete stock of VETCHES, CLOVER, TIMOTHY, ALFALFA, ORCHARD GRASS, ENGLISH and ITALIAN RYE GRASS, etc., of the HIGHEST TEST SEEDS, at the lowest market prices. Write us for prices and samples on what you need.

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Fall Seeding is advisable. Send for catalog.

## From \$8000 to \$20,000 Per Acre

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### Golden Seal and other Medicinal Plants

My beds extend 4 miles under artificial shade, are 7 years old, and I am booking orders for plants and seeds. Write or make appointment to call.

Reliable information freely given.

## C. E. THORPE

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Hardy Ornamental  
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Specialty

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections.

Rose Bushes, fine assortment in two-year and three-year sizes.

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Specimen Grounds, 702 Pioneer Avenue, East

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Varieties complete of APPLES, PEARS, CHERRIES, PLUMS, PRUNES, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

ORNAMENTALS—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce, Retinosporas, Cypress.

JOHN A. STEWART & SON, Props.,

Christopher, King Co., Wash.

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## EXPLOSIVES IN LAND CLEARING.

(By Harry Thompson, Agriculturist, United States Department of Agriculture.)

Explosives have come to be used quite generally in removing stumps from logged-off land. This is especially true of the Pacific Coast section, where large stumps predominate. In this section it is impractical, often impossible, to pull the large stumps before splitting and loosening them by the use of a charge of stumping powder. When large stumps are pulled without first being blasted, their disposal will often cost more than the pulling cost. It is next to impossible to pile them by the use of a team and blocks so that they will burn. Splitting them even by the use of powder is a hard proposition.

Unless there are many worthless logs and tree tops to pile with them it is very hard to burn solid, unsplit stumps. They often require to be repiled more than once.

On the other hand, when stumps are blasted by the use of small charges of powder, just large enough to split and loosen the stumps without throwing them out of the ground, they may then be removed by the use of the stump puller, a team with blocks and line, or a power outfit. When the pieces of such stumps are piled they usually burn quite readily. In some cases more powder is used in order to remove the stump entirely, or the largest part of it, so that a direct pull of a horse or team will remove any remaining root. This is not practical where the large stumps are found, but may be done in some sections where the white pine stumps predominate.

Many settlers on logged-off land hesitate to use powder to blast stumps because of the danger connected with the handling of explosives. While there is an element of danger in their use, any one who is ordinarily careful can safely handle the low grade powders used in stump blasting. All powder should be used when fresh. Never accept or try to use powder that has been on hand for a considerable length of time, or that shows by the wrappers that it has been subjected to varying degrees of heat. Powder that has been frozen should not be thawed unless for immediate use. Large amounts of explosives should not be purchased unless adequate means for storing them are provided.

The time which the blasting of stumps can be done most economically is when the soil is well filled with moisture. At this time the water fills the air spaces and the stumps leave the earth more easily. The saving is very apparent in loose sandy soil. Stumps in such soils should never be blasted when the soil is dry.

In all but exceptional cases of stumping, it is better to use powder of a strength equal to 20 to 30 per cent. nitro glycerine powder, rather than higher explosives. Powders of the above grades are found to give as good results at less expense than the higher grades.

No man should attempt to use powder without first thoroughly familiarizing himself with the best methods of handling the explosives that he intends using. This can be done by observing others at work, by reading directions furnished by the manu-

facturer, or the U. S. Department of Agriculture bulletins upon the subject.

### TARIFF TINKERING TO STOP.

A national movement has been started to actually take the tariff out of politics and politics out of the tariff. And this movement, launched by some of the leading thinkers of the country, of the various political complexions and business training, has developed and proceeded to a degree which can only find foundation on firm material.

Constructed by President H. H. Gross, of the Tariff Commission League, a plan has been formulated for the establishment and maintenance of a nonpartisan Tariff Commission, with long tenure of office, a salary equal to that of a cabinet officer, a permanent and automatic appropriation by Congress and the broadest powers for investigation and research and recommendation. A significant point is the provision for an actual nonpartisan Federal Commission, the phraseology of the tentative bill to be submitted for approval by Congress being "no one political party shall have a majority of the Commission."

It is purposed to make the operation of such a Commission, which does not deprive Congress of the initiative or administrative power vested in it by the Constitution of the United States, proceed to complete inquiry, have hearings where all sides shall be heard, sit with the actual tariff-making branches of the National legislature and recommend changes where the current provisions and restrictions are found to be oppressive and one-sided. In other words, the Commission studies the tariff in all its phases from an economic and constructive viewpoint and places in the hands of Congress the findings upon which the tariff can be constructed and changed for the good of all and with an intelligent grasp of the entire situation.

The timeliness of such a movement is proven by the prompt indorsement and offer of co-operation from all sections, from all parties, from metropolitan and country newspapers, from industrial organizations, National, State and local, agricultural press and organizations, labor bodies and high officials and many of the leading women of the country who are taking a direct interest in public welfare.

Agriculture and labor are given the same recognition and consideration as trade and commerce and any branch of American industry. This is the first time in the tariff history of this country that special interests have no advantage, either in representation or opportunity of hearing. The effort of the Tariff Commission League to stir public sentiment and stimulate popular support for such a measure as proposed is worthy of the fullest co-operation and indorsement.

### FARMERS' MONTH AT EXPOSITION.

The P. P. Exposition has set aside the entire month of October for the Western Forestry and Conservation Association, Oct. 19-20; California

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farmers and agriculturists and cattlemen, should take a recreation trip.

Many vastly important problems will be discussed at the various conventions. The principal ones which will convene in October are the American Shire Horse Association, Oct. 4; California Conference of Boys' and Girls' Agricultural Clubs, Oct. 16; State Grange, Patrons of Husbandry, Oct. 19-22; Ayrshire Breeders' Association, Oct. 20; American Short Horn Breeders' Association, Oct. 22; American Aberdeen Angus Breeders' Association, Oct. 25; Red Polled Cattle Club of America, Oct. 26; California Creamery Operators' Association, Oct. 28-29; and the American Forestry Association.

Thirty-one agricultural and live stock conventions will meet during November, when the big horse and cattle, sheep, swine, dog and cat shows will be held. Many thousands of dollars will be awarded in prizes.

#### FARMER'S PRIVATE OFFICE.

How many farmers have an office? A place in which to take the caller who does not wish to talk over matters before the family.

Some few farmers have offices and have found them an asset in farm management. Look over the farm buildings and see if a small room can not be partitioned off the wood-house, the tool-house or some other convenient place; have a stove, chairs, a desk in which to keep papers, accounts, etc. Have a shelf or cupboard for bulletins and farm papers which can be readily referred to. Into such a room the farmer can go and quietly attend to the business of the farm.

#### SCHOOL FOR FARMERS.

Announcement is made of the Winter School for Farmers to be held at the State College in Pullman, January 4 to February 12. All branches of Agriculture, Horticulture, Forestry, Home Economics will be taught. Evenings will be devoted to lectures, concerts, and social entertainments. Tuition free. Write Frank T. Barnard, Registrar, State College, Pullman.

#### BILL, THE LIVE FARMER.

Bill Turner, according to the Kentucky Inquirer, was a farmer; he labored all his life. He didn't have no schoolin' and neither had his wife. But Bill was built for business and made the wheels go round, and left a healthy fortune when they put him under ground. He was always taking chances, paid a hundred for a bull. His neighbors called him crazy, but he left a stable full of cows that broke the record, making butter by the ton, an' Bill had his picture printed in the Squeedunk Weekly Sun. He had new-fangled notions of making farming pay. He even bought a fool machine to help him load his hay. The neighbors fairly snorted when they saw the bloomin' thing; said Bill would never make it work. It wasn't worth a ding! Bill didn't say a single word, an' didn't care 'bout what they said, fer slick as grease his hay went in the barn an hour before a thunderstorm came sailin' out that way and caught his neighbors in a pinch and spoiled their new-mown hay. Bill's neighbors put their milk in cans and set 'em in a tank. Bill skimmed his milk with a machine and turned it with a crank. Smith chops his firewood with an ax.

Bill used some gasoline and saws a hundred cords a day with another blame machine. Today Bill's wife rides in a car and dresses up in silk. Smith's wife rides in a wagon and keeps on skimming milk.

#### SEED CORN DRYING POINTERS.

Dry in sunshine and fresh air.  
Dry before danger of freezing.  
Use fire very carefully, if at all.  
Dry the cob thoroughly as well as the kernel.  
To avoid heating or molding, let no ear touch the next ear.

J. C. HACKLEMAN,  
Columbia, Mo., Experiment Station.

#### SEED STANDARDS.

The law governing seeds in Washington makes it a crime to sell seed adulterated with wild mustard, quack grass, Canada thistle, wild oats, dodder, or corn cockle. Seeds are mixed or adulterated within the meaning of the law when:

First. When orchard grass (*dactylus glomerata*) seed contains 10 per cent., or more by weight of meadow fescue (*festuca elatior pratensis*) seed, or Italian rye grass (*loium italicum*) seed, or English rye grass (*loium perenne*) seed.

Second. When blue grass or Kentucky blue grass (*poa pratensis*) seed contains 5 per cent. or more by weight of Canadian blue grass (*poa compressa*) seed, red top chaff, red top (*agrostis alba*) seed, or any other seed or foreign substance.

Third. When red clover (*trifolium pratense*), mammoth red clover (*trifolium pratense* var.), or alfalfa (*medicago sativa*), contains 5 per cent. or more by weight of yellow trefoil (*medicago lupulina*), or sweet clover (*melilotus alba* and *M. officinalis*) seed or burr clover (*medicago denticulata*) seed.

The per cent. of purity required ranges from 80 per cent. with Kentucky blue grass to 92 per cent. for red clover and 98 for crimson clover, and alfalfa 92 per cent.

The germanating test required runs from 75 per cent on clover and brome grass to 80 on alfalfa, rye grass, 85 on fescue, and down to 45 on Kentucky blue grass. The State Dairy and Food Commissioner, Olympia, is required to secure samples of seeds offered for sale and have them analyzed from time to time, and results published in bulletin form. Any person desiring analysis of seeds for his personal use must pay a fee of 50 cents for the service.

#### SULPHUR IN FERTILITY.

According to experiments carried out at the Corvallis, Oregon, Station, by Prof. Reimer, it appears that the benefits from super phosphates comes from the sulphur content in the sulphuric acid used in making available plant food in phosphate rock more than from phosphoric acid. Available phosphate was applied to plants and in other cases a sulphate which yielded its sulphur and in every case the sulphate proved to be most effective.

It has been known for some years that sulphur was a necessary ingredient of nearly all plant life, but it has been taken for granted that it was supplied in sufficient quantity in all soils. If results obtained by Prof. Reimer are confirmed by other experiments it may be that we will all soon be making applications of crude sulphur or using a complete fertilizer in which sulphur is an ingredient.

# Fall Sowing

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# [Supplement to the Northwest Horticulturist and Dairyman]

Introducing to the Agriculturist, Horticulturist and Dairyman of the Pacific Northwest

## GROUND LIMESTONE

As an Indirect Fertilizer in the Production of Vegetable Life, and Showing Its Effect Upon All Soils and Plant Life.

Written by HENRY BUCEY, formerly President of Washington Horticultural Society and State Board of Horticulture; also Original Editor and Publisher of Northwest Horticulturist.

It is self evident that the period of intensive and diversified farming has arrived. To be successful in this industry requires that lands be placed under a high state of cultivation, and in order to do this, three-fourths of our lands would require the use of one or more of the various commercial fertilizers.

The chief fertilizers are nitrogen, potash and phosphorus. Without these, plant life could not be maintained. All other necessary constituents of plant life are generally found abundant in nearly all soils, with the possible exception of lime. This element is as important as the first three mentioned. While nitrogen, potash and phosphorus are essential elements in soils to give vegetable life, yet these are made more abundant in all soils by reason of the presence of lime carbonates, or sulphate of lime (gypsum) or both.

Prof. E. W. Hilgard, our best known American chemist and authority on treatment of soils, says: "Lime carbonates may be said to be the basis of civilization."

During the year 1912 there was published and issued by the United States Department of Agriculture a publication entitled "Fertilizer Resources of the United States," wherein was shown the available source of nitrogen, potash and phosphorus rock of the United States. The realization that the time was drawing near when recourse would have to be had to the use of artificial commercial fertilizers by the farmers generally in order to keep up the productiveness of our soils, was the reason for the publication of this book. It states that a compilation of statistics throughout the United States shows that there is expended for commercial fertilizers in the United States the sum of one hundred twenty million dollars (\$120,000,000) annually. It further shows that this country is more short of potash than of nitrogen or phosphorus.

The publication further goes on to say that the greatest deposit of phosphorus rock in the world is to be found in Montana, Idaho, Utah and Wyoming, and that our chief supply of potash comes from Strassfurt, Germany, and of nitrogen from Chili, in the form of nitrate of soda. The United States has now employed through the Department of Agriculture a great number of geologists and chemists who travel over the United States endeavoring to discover sources of fertilizer.

The Experiment Stations of Washington and Oregon have repeatedly announced through their various publications that the soils of Western Washington and Oregon are generally deficient in lime, and that a thorough application of lime to such soils would result in a wonderful increase in the products of the soil.

The agriculturists and horticulturists are not as a general thing, well informed in regard to the use of lime in its most desirable form. They consider lime as that which has been subject to heat, or burnt in a kiln, and then used in an air-slaked state; or the burned rock scattered over the field and allowed to air-slake; or burned lime that has been slaked either by water or steam, then dried, crushed and spread over the land. All such preparations are caustic lime, except the last, which is hydrated lime. They are all injurious to the humus and nitrogenous matter of the soil. In other words, the use of caustic or burned lime upon the soil will destroy for the first year after it is applied more fertilizer element than it brings to the soil by its application.

The Experiment Stations of Eastern States are now teaching that the proper way of liming soils is to take the best quality of limestone and have it crushed, ground and rolled as fine as flour. In this condition it is called lime carbonate. It has retained all of its original carbonic acid, which is so beneficial to vegetation, but which is lost in the burning of limestone. If natural limestone weighing one hundred pounds is put in a kiln and burned, when it comes

out it will weigh but 56 pounds, 44 pounds of carbonic acid having been driven off by heat. The 56 pounds left is calcium oxide, or burned lime.

Now burned lime has an affinity for carbonic acid to the extent that it will absorb as much of that acid as was driven off when it was burned. It is this affinity for carbonic acid that makes it valuable for masons to cement together rock or brick, or for plastering on lath when used with water and sand in the shape of mortar. The same principle enters into the making of cement from lime and clay. If you wish to demonstrate this fact, take such lime and wet it into a paste and spread it out on a board and let it dry. Repeat this until three coats or layers have so dried, then put over this carbonic acid and the result will be artificial marble. It is this attraction for carbonic acid that causes potatoes to become scabby that are planted after an application of burned or caustic lime; that destroys humus and nitrogen matter of the soil; that burns and makes other vegetation scabby. The water in a growing plant needs more or less carbonic acid, hence the action of the caustic lime on most growing plants.

Now the natural limestone ground as fine as flour will not have any detrimental effect on plants. It will not scab potatoes or other vegetation. It will not destroy the humus or nitrogenous matter of the soil. In fact, you can mix nitrogen and other fertilizers with the ground limestone when you apply the latter to the soil, and it will prove a mutual benefit to all such fertilizer. As lime is the natural base to be used in making applications of fertilizers to renew soils and make them productive, when it is used as a base the other necessary fertilizers need not be used in such quantities as would be necessary if no lime were used, as lime unlocks the soil, thus creating plant food.

Man and beast would be greatly benefited if the grain and vegetables consumed by them were grown upon soil that contained a sufficiency of lime for all purposes. One of the great benefits of lime to the human system is obtained from the milk we consume. Milk from cows pastured upon land containing a sufficiency of lime, contains six grains of lime for each pint of milk. Hence, all pasture lands should have an application of ground limestone if deficient in lime.

We deem it advisable to give herein extracts from various publications written by eminent chemists and those in charge of Experiment Stations in different parts of the United States.

Wm. P. Brook, Ph. D., Professor of Agriculture of Massachusetts Agricultural College and Experiment Station, in his publication "Agriculture," Vol. 2, Page 302, Subdivision 381, under the sub-title "Lime," states: "It should be remembered that lime is an essential element of plants. It may, therefore, be needed for direct manurial action, but as a rule this is not the case, because the element is so abundant in most soils. The application of lime in any of the various forms is commonly beneficial rather because of some special effect, or effects upon the soil, than for the reason that it supplies a deficient element which the plant must take up as food. In various parts of the United States are found soils which, although tilled with the utmost care and supplied with a liberal amount of the ordinary manures and fertilizers, are yet very unproductive. Sometimes crops are almost absolute failures although the manures are used in large amounts. This may be the case when the field is not apparently in special need of drainage, although in very many instances it will be found that sufficient drainage has been an important factor in producing existant conditions which are unfavorable to fertility. Wheeler believes that such soils are very common in Rhode Island and in Southern Massachusetts, and experiments both in Rhode Island and Massachusetts have shown that an application of lime on some of these unproductive soils has proved highly beneficial. How best to determine whether soils will probably be benefitted by lime is a most important question, but before considering it, it seems best



to point out, first the effect of lime on plants, the second the effect of lime on soil."

**"382. The effect of lime on plants."**

"(a) Lime is absolutely necessary, as shown by the fact that if it is not supplied, the growth of the plant ceases as soon as it has made use of the small amount of lime contained in the seed.

"(b) The amount of lime in plants depends in a measure upon the quantity in the soil. No plant can develop without a certain minimum quantity, but if lime is abundant in the soil, the plant takes more than this minimum, and within certain limits the more abundant lime is in soils, the larger is the percentage of lime in the plant. Fodder grown upon a soil rich in lime contains a larger quantity of that element than fodder of the same kind grown on soils poorer in lime. The fodder richer in lime is better food, especially for growing animals, than that which contains less lime. Limestone regions are generally noted for fine stock.

"(c) The form of the plant differs with the amount of lime in the soil. The experienced eye recognizes at once whether the soil is rich or poor in lime by the growth of the crop. On soil rich in lime the plants are compact, short jointed, stouter in the stem and in the development far more luxuriant than in soils poorer in lime. In soil richer in lime moreover the plant inclines to far greater fruitfulness. Plants on soil poor in lime are long jointed, slender and comparatively feeble. They may blossom abundantly, but produce little seed. Grain and grasses on soil poor in lime because of their more slender form, are far more likely to lodge, than on soil rich in lime.

"(d) Different plants require different amounts of lime in the soils. The various species of plants differ extremely in respect to the lime required in soil for good growth. Most of the plants belonging to the clover family require a large amount of lime in the soil; lupine is an exception.

"Peas, beans, vetch, clover of all kinds, and alfalfa require an abundance of lime. \* \* \*"

**"383. The effect of lime upon soils."**

"As has been stated, the beneficial effect of lime is usually to some special action on the soil.

"The effects which may follow a heavy application of lime are numerous. They are best considered under two heads, chemical changes and mechanical changes. Under the first are included changes that render plant food more available. Under the second, changes which bring the soil into more favorable relation with water, air, etc.

**"384. Chemical effects."**

"(a) Lime renders the potash of the soil more available. It has been pointed out that a large part of the potash of our soils is present in comparatively insoluble silicates. Lime may decompose soil silicates, setting the potash in them free, and thus greatly increase its availability. Experiments have proved that when lime is applied to a soil originally poor in this constituent, the plants are not only richer in lime, but also in potash. The use of lime may then for a time have a similar effect to that of potash contained in manures, but it must be remembered that lime does not supply potash. It simply renders the potash in the soils more available, and if the store of potash naturally present in the soil is small it will need liberal potash manuring all the sooner, because of liming.

"(b) The presence of sufficient lime in the soil prevents the soluble phosphoric acid applied in fertilizers from satisfying its hunger for a base by combining with iron and alumina, which is undesirable, because phosphate of iron and alumina are very insoluble. When lime is present phosphoric acid will take this by preference, and reverting phosphate thus formed is much more available than would be the phosphate above mentioned.

"(c) Lime promotes the decomposition of organic substances, such as humus, sod, stubble, etc., and thus hastens the time when the valuable constituents of these materials are ready for the use of the next crop. The effect of lime is particularly valuable on the heavy soils in which organic matter naturally decays slowly.

"(d) Lime favors the changes of ammonia into nitric acid, i. e., it makes ammonia nitrogen more quickly available. The favorable effect of lime increasing the yield when sulphate of ammonia is used as a fertilizer has been pointed out (350).

"(e) Soils needing lime often contain free acid, i. e., acid not combined with a base. Such soils are sour. Lime is the most effective agent which can be used to sweeten such soils.

"It is the heavier or poorly drained soils, those rich in humus, those improperly worked and cultivated, and those on which such

fertilizers as kainit and muriate of potash have been largely and continuously used, which are more likely to become sour. The favorable effect of employing lime when muriate of potash has been extensively used has been pointed out. Soil sometimes contains injurious compounds of iron. These may be rendered harmless by the free use of lime."

**"385. Mechanical effects of lime."**

"Lime makes soil more mellow. On working, on the one hand, a soil poor in lime, or, on the other hand, one rich in lime, it will be noticed that the two soils behave very differently. The loam which contains little lime is made fine only with great difficulty. It adheres to all the implements used in it. A loam rich in lime crumbles far more easily. It is readily brought into good tilth, it does not adhere to such an extent to the implements used in it. If loam containing much lime is exposed to the action of frosts the influence is highly beneficial. It becomes more mellow. Loam poor in lime, on the other hand, is not benefited to nearly the same extent. Loam of this kind turns up in tenacious clods. On lying undisturbed in spring or summer it forms a hard crust. Soil rich in lime crumbles on being turned over by the plow. If rich in clay and moist, it may be somewhat lumpy when turned but these lumps are not tough, they are readily broken. An open, porous soil allows water to penetrate quickly. Surplus water passes into the subsoil. Soil poor in lime and rich in clay is very impervious to water and after a heavy rainfall remains wet too long. The air cannot penetrate a soil of this character, and the absence of sufficient air as well as the stagnant water is injurious. As the result of an experiment it is reported that a layer of water about two inches thick required 26 days and 19 hours to pass through a clayey soil. After the soil was mixed with 2.5 per cent. of lime the same quantity of water passed through it in 7 hours. The explanation of this remarkable effect of mixing lime with clayey soils is that it causes the exceedingly fine particles of clay to gather in little balls. Between these little balls of clay, air and water circulate as between grains of sand, and it is to this particular effect chiefly that the great improvement in the heavy soils resulting from liming is due. The fact that certain fertilizers, among which kainite, muriate of potash, and nitrate of soda may be named, when freely used to make the soils compact has been pointed out (370, b, c). The use of these fertilizers also increases the tendency to formation of a crust at the surface. If such a crust be broken up by cultivation or hoeing, it forms again after the next rain. It is practically impossible under these circumstances to keep the soil in suitable tilth. The use of lime in connection with such fertilizers will prove an effectual preventive of crust formation.

From Porter's "Principles of Chemistry," page 556. Subdivision 1143-7. "Use of Lime."

"Lime in soil, besides serving directly as building material for all forms of vegetation, is the key which unlocks other treasures of the soil and supplies them also to growing plants. The building material which is furnished, as before explained, by the decay of previous plants, is not sufficient. A portion of it never reaches the fields from which it was originally derived. Exported in the form of grain or milk or beef, it returns to the soil in some distant region, or is poured into rivers of the sea through the drain of populous cities. New supplies of potash and other material are, therefore, demanded by the vegetation of every successive year.

1143. "A large part of the material referred to is locked up in hard grains or granite or other silicates which are found in the soils. Being insoluble in water and other solvents of the soil, they are inaccessible to the plant. Lime has the property of forcing itself into the rocky prison of every such insoluble grain and setting part of its inmates at liberty. At the same time it opens the door to the action of other agencies, which liberates the rest. They are then floated away in the water which penetrates the soil and being in due season absorbed, or built into the substance of the plant.

**Action of Lime on Mineral Matter Explained.**

1144. "The action of lime which has just been mentioned is a simple consequence of its basic properties. It takes possession of part of the silicic acid of the alkaline silicates in the rocky grains. Their potassa and soda being now combined with this acid in small portions, are soluble in water which penetrates the soil.

1145. "Water of the soil always contains a certain portion of carbonic acid. This acid being itself material for vegetable nutrition, has also the properties of dissolving those mineral substances which the plant needs for its support. By the joint action of carbonic acid and water, this transfer is constantly going on, even without the aid of lime. But the latter substance very much accelerates the action and thus adds greatly to the fertility of the soil.

**Action of Lime on Organic Matter.**

1146. "Lime has another important effect on soils, in hastening the decomposition of their organic matter and thus indirectly supplying in large quantity valuable material before mentioned, which



these are adapted to furnish. As this decomposition proceeds in the presence of lime, part of the nitrogen of the organic matter takes the form of ammonia, and a part is converted into nitrates, as will limestone when applying it to the soil, and there will be no corroding, either is practically immaterial as both are found to subserve a similar purpose in building up the plant.

1147. "All of the effects which have been mentioned may be regarded as gradually produced in every soil which contains carbonates of lime as a constituent. When it is deficient in quantity, they are, of course, increased by its addition in the form of chalk, marl or limestone. These substances have also the effect of sweetening peaty and marsh soils, which are rendered sour from the presence of too large a proportion of vegetable matter, and thus render them fit for cultivation."

The following is copied from an article written by an eminent writer on such subjects for "The Country Gentleman," the oldest farm journal in the world, in its issue of September 20th, 1913. It is well worth reading carefully as regards to the use of lime and the form of lime to be used to improve our soils. The truth of the written statement will not be denied by anyone who is well informed on the subject.

#### The Kind of Lime to Use

"Scientific authorities agree that lime is a fundamental requirement for soil fertility, because it provides in a degree for essential chemicals, bacterial and physical conditions, as well as supplying a plant-food want. Relatively few plants, and those of no great importance, will grow in soils that are decidedly acid; more will grow where a slight amount of lime is present, but many important crops, particularly those of value for soil improvement, most of the legumes, must have an ample lime supply.

"The value of this material has been proved by thousands of years of use in our civilization. Writings of the ancients, both in Europe and in China, confirm this by reference to marl, chalk and lime. That their soils maintained fertility for so long a time without commercial fertilizers is proof of their using the right forms of lime in the right manner.

"American agriculture is behind in this respect, with depleted fertility after a short period of cultivation. In the Central and Western States, where natural fertility still remains, the farmers have been cultivating practically virgin soils, most of which, especially the prairies, contain considerable lime carbonate. In the longer-cultivated Eastern States, where the mountain sections were also frequently limestone soils, considerable lime in various forms was applied formerly, until the general use of commercial fertilizers commenced.

"Because of humus and non-acid soil conditions, fertilizers gave their best possible results at the start, so lime went out of favor. But now it is found that soil conditions are such that fertilizers, though often profitable, do not give proper results and lime must be liberally used almost everywhere after soils have been cultivated for a generation. Farmers who have tried the best form of lime for their conditions, when the need was great, have obtained benefits for some of their crops equal to those that have resulted from the use of expensive high-grade fertilizers.

"A Long Island farmer, whose land I found needed lime more than anything else, said he did not believe that any benefit could be obtained from its use; he has found his neighbors were right in saying that it had no fertilizer value. Then I learned he had used lime last year as the only fertilizer for potatoes on a light sandy soil that was very deficient in humus. Nothing but demonstration will keep such a man straight on the fertilizer proposition.

"Lime is the common name applied to distinct compounds of the element calcium, which is never found uncombined in Nature. The three combinations frequent in Nature, called from the respective elements to combining, are lime carbonate, as limestone, marble, chalk, marl and oyster shells; lime sulphate, which is calcium, oxygen and sulphur, as gypsum or land plaster; and lime phosphate, which is calcium, oxygen or phosphate rock. Thomas, slag, a manufactured form, is a waste product from the use of limestone in the process of smelting phosphorus iron ores.

#### A Waste of Nitrogen

"In chemical actions a slight variation in the elements forming a combination may make a great change in its character. So non-caustic lime carbonate, a combination formed of 56 per cent. of oxide of lime—calcium and oxygen—with 44 per cent. carbonic acid—a gas combination of carbon and oxygen—upon being burned gives off its carbonic acid and is thus reduced to an oxide of lime, known as quicklime, which is caustic or corrosive, very different from the mild carbonate form. These two forms are chemical opposites as to respective action on organic matter. The caustic is antagonistic to nitrogen, decomposing, driving off and destroying this valuable fertilizing element. The carbonate conserves nitrogen in a fertilizer sense against the loss which would occur naturally in course of time of this carbonate were not present; yet it makes the nitrogen more

available for plant food, holding it in which may be called a transitory form of nitrates ready for plant use as it is wanted.

"For this reason, although lime carbonate is also moisture conserving, as is well known, limestone soils may maintain their fertility for centuries. Storer says 'It may be questioned if caustic lime should ever be used in agriculture in place of the carbonate.' Professor Hopkins of the Illinois Experiment Station says: 'It was shown at the Pennsylvania Experiment Station by a sixteen-year comparative test on a rotation of crops that for every ton of burned lime used there was a loss of organic matter equivalent to four and one-half tons of manure, or about \$7.00 loss in nitrogen alone, without reference to the deterioration of soil texture, while the carbonate of lime both avoided this heavy loss and produced greater aggregate yield of crops.'

"So this difference more than offsets in the purchase price the value of 44 per cent. less of calcium oxide in the carbonate than in the caustic form. The carbonate can be applied safely at any time, as a top dressing on plants or directly with seeds, or in a mixture with fertilizers and manure; in fact the greatest manure benefit will be obtained thereby. Also it does not have the disagreeable causticity for handling when spreading broadcast.

"Most thorough lime tests have been made at the Rhode Island Experiment Station, and Professor Wheeler says of their use of burnt lime: 'In some cases where no benefits were obtained the first year, or even actual injuries resulted, after two or three years, when the lime became recarbonated, decided benefits were realized. Where lime was injurious at the outset, chiefly on account of the caustic character of the hydrated lime used, the results would have been good the first season had the carbonate form been applied.'

"The loss of a season's benefits is too important to be overlooked in deciding on what form of lime to use. From its many advantages, lime carbonate is assuredly of first importance in soil fertility. Hilgard, an eminent authority, says: 'Lime carbonate may be said to be the basis of civilization.'

#### There Are Limes and Limes

"What is called hydrated lime is the burnt kind, water-slaked by a special process. It must contain twenty-five per cent. of water, which the purchaser pays for at lime prices, but its antagonistic action on nitrogen is not lessened—in fact, it is more destructive perhaps. Burned lime will absorb carbonic acid from the air and become recarbonated; but how soon, especially when in the soil, is disputed by the best authorities. If air-slaked in a heap recarbonating may require months, while lime manufacturers advise plowing under soon to avoid caking. The indications as observed in many soil experiments are that recarbonating in the soil may require two or even three years under some conditions.

"Nevertheless the benefits from liming are so great in correcting soil acidity and otherwise that if lime carbonate cannot be obtained it will pay well to use burnt lime, despite first losses, especially on muck or peaty soils rich in organic matter.

"It is well to remember that most of our limestone is impure; much of it thirty per cent or more. Magnesia, although an alkali, is an opposite of calcium in plant use. Both may be needed in plant growth, but an excess of magnesia over a very small amount is injurious to some plants, especially tobacco, while for general crops no excess of lime carbonate is injurious.

"Fresh water marl limestone dissolved and precipitated by Nature is a promising source of lime carbonate, because of its abundance and purity. When dry, it is certain to be a fine powder. A little potash and phosphoric acid added to this makes improved woodashes of more agricultural value than the natural ashes. Marls of various degrees of purity are found in beds in many sections of the country. Some of these beds are worked commercially, while others contain such a large percentage of impurities as to be economical only when used on land adjacent to the beds.

"Lime sulphate will not readily correct acidity, so it is of decidedly less value than lime carbonate or the caustic form. Lime phosphate is high priced for a lime supply and it is only slowly available, but it is believed that some of the benefits from use of ground bone, raw rock phosphate and Thomas slag are due to their lime content.

"The New Jersey Experiment Station warns farmers against various other manufactured products of waste lime that are on the market, because of injurious elements in them, such as boracic acid and chlorine. Whenever it is found possible to get lime cheaply from any of these factories that produce lime as a by-product, it is advisable to have a sample analyzed or to write to the State Experiment Station for information concerning this particular supply.

"If unsatisfactory results are obtained from the use of lime, the liming policy should not be condemned. The fault is in the lack of knowledge as to the right kind to use. Often times too, when land needs lime there is some other limiting factor that must be attended to before the results of liming will be apparent. To get proper benefits, the farmer must know about the lime he uses, and it is worth considerable money sometimes to learn this."

In conclusion, we have shown as briefly and as comprehensively as could practically be done in this treatise, that lime is the natural and preferred base in the use of all fertilizers. The quotations given herein from some of the most eminent and authoritative writers on such subjects all go to prove this beyond question. They also prove that without the presence of lime in the soil, the application of most fertilizers will prove deficient in giving the results desired, and that no useful and valuable vegetation can exist without the presence of



lime in the soil. Further, that the use of burnt, or caustic, lime upon soils will injure the same by destroying the humus and nitrogenous matter of the soil.

The foregoing quotations show that ground limestone applied to the soil supplies all the necessary lime to the various plants. It sweetens the soil, and unlocks the silicates, liberating potash and other valuable materials just as efficiently as burnt or caustic lime does, without producing any injurious effects upon the humus or nitrogenous matter of the soil like burnt lime does.

The efficacy and added value of ground limestone as a fertilizer and ameliorator of the soil depends upon how fine the stone is ground. We do not recommend it unless it is ground fine enough so as to pass through not less than a 100 mesh sieve, which means ten thousand perforations to each square inch of the sieve. This is for the reason that in nature limestone soil is made from the oxidation of limestone by the action of the solvent power of water in connection with gases of the air and the acid of the soil. This process is naturally slow by reason of the surface exposure of the limestone to such agencies, so the finer the stone is ground the greater will be the surface to be acted upon by such agencies, and greater will be the supply of plant food by correcting the acids of the soil and aerating same, making it more suitable for plant growth.

It has been stated that if ground so very fine it will be wasted and carried away by the soil water, and be lost. Such is not the case, as when it is once incorporated with the soil, it is not subject to waste like burned or caustic lime, for burnt lime being calcium oxide, its affinity for carbonic acid causes it to seek water, as all water has more or less carbonic acid. Ground limestone has its calcium wants satisfied; therefore it has the proper balance for plant food by reason of having this proper balance as nature provided. You can mix your various commercial and other fertilizers with ground limestone with applying it to the soil, and there will be no corroding, scabbing or other injurious effects to vegetable life.

#### Dairymen and Stockmen

It is self evident that what has been said by an eminent writer is true: That a limestone country is always a good stock country, and that in such a country stock are always healthy and in good condition. This condition of the stock in a country with a limestone soil should suggest to the dairymen and stockraisers that an application of from one to three tons per acre of ground limestone on their pastures and meadow lands would prove to be one of the very best investments they could make. It would improve the milk product, as on land containing sufficient lime in the soil, the milk product will contain 6 grains of lime to each pint of milk. The benefit of such supply to the human system and to the growing stock is self-evident.

#### Grades of Ground Limestone.

There appears to be a great difference of opinion amongst those making experiments with ground limestone upon soils at the various Experiment Stations throughout the United States, as to the most desirable fineness. They are almost unanimous in stating that ground limestone is preferable to burned lime in its various forms, and will accomplish the same purpose when applied to the soil without any injurious effect, provided you can get the ground limestone fine enough. We could produce 20 mesh ground limestone at our plants for a dollar a ton less than we produce the 100 mesh. Reducing it to such a fineness by rolling is where the greater expense of manufacturing occurs. In selling the 20 mesh to the farmer we are not supplying him with the very best material to improve his soils.

Lime existing in the natural limestone soils is made by the oxidation and disintegration of limestone by reason of the solvent power of water, gases of the air and acids of the soil. These agencies can be aided four-fold by the action of frost. As the surface of all stone absorbs moisture, this moisture when frozen causes the stone to disintegrate and fall away, thus causing greater surface to be exposed to the above mentioned agencies to act upon. This reduces the limestone to a fine floury dust, which becomes incorporated with the soil. In this state it removes the acidity of the soil and supplies plant food itself, and unlocks other plant food held by most soils.

However, Western Washington and Oregon has but very little freezing weather, and a piece of limestone as large as a grain of wheat placed an inch under the soil surface will lay there for years before it is wholly disintegrated so as to aid plant growth and improve the soil.

Then again, in making 20 mesh ground limestone, considerable of it will go through a 100 mesh sieve. When you are applying the 20 mesh product to the soil with a drill or spreader, the very fine will pass out first, and the coarser material last. Thus the effect upon the soil will not be uniform and satisfactory. For this reason we do not commend the use of any ground limestone but that 100 mesh fine.

#### Amount of Ground Limestone to Use

The amount of ground limestone to use per acre will have to be determined by the nature and condition of your soil. If your land is comparatively level and of a clay formation, and containing considerable vegetable matter, humus etc., it is very likely to contain much acid. Such land will require two tons per acre of bottom land, and one ton to one and a half tons if upland. If the land is upland, cleared of timber, of a shot clay formation, with a rolling or undulating surface, it will require one to one and a half tons. Upon light sandy or gravelly soil one ton per acre. Or twelve to fifteen hundred pounds applied every five years on such soil is better.

There are soils in the low bottom lands or marsh lands of this state which contain peat and decomposed marsh grass sod. The soil from this decayed vegetation has become very acid, and will require five and six tons of ground limestone to the acre. Samples of such soils should be submitted to a chemical test before determining the amount to use. To take these samples, take some of the soil from various places over the land to a depth of eight or ten inches, put all together, and thoroughly mix. Then take a small portion of the mixed soil and send it to the chemist at the State University at Seattle, or to the Chemist at the State College at Pullman, for analysis and report.

Or you can send to any drug store for blue litmus paper to make a satisfactory test yourself. To make the litmus paper test, take some soil from various parts of your land as above described, moisten the soil if too dry with drinking water, then thoroughly mix the soil together, take a small portion of it, and bury the paper in it for fifteen or twenty minutes. Remove the paper and let it dry.

If the dried test paper is pink or red as compared with the original color, the soil is acid. As a rule, acidity of the soil increases markedly in the depth of the soil. Your druggist will sell you enough litmus paper for five cents to make this test, if you do not care to send to the lime manufacturers for it.

#### Time to Apply Ground Limestone

The best time is in September and October, as the rains that follow assist in incorporating the lime with the soil. But more lime is applied in the spring than any other time, and it is good advice to apply it whenever you can. It will not injure vegetation to apply it whenever you have the time and opportunity. Fall and early winter is the best time to apply the lime to meadows, pasture fields, parks, orchards and lawns, as the rains following will carry it into the soil. After applying it upon fields or gardens for the production of annual crops, follow the application by light disking or harrowing. It will work down into the soil very rapidly.

#### How To Apply Ground Limestone.

This may be done by hand with a light shovel from a wagon, or from small equal sized piles placed at regular distances apart. It can be spread this way quite evenly and uniformly. There are suitable spreaders and drills made for the purpose. Your implement or hardware dealer will look them up for you.

For further particulars regarding treatment of various soils, the application of lime and its effects upon soil and vegetable life, address the writer of this article, 10th Floor, White Building, Seattle, Wash.

## Ground Limestone Ready for Shipment

Following is our price for ground limestone f. o. b. cars our plants at Concrete, Washington, our product being ninety per cent. calcium carbonate.

|                                                                             |        |
|-----------------------------------------------------------------------------|--------|
| Ground 100 mesh fine, per ton, in bulk .....                                | \$3.00 |
| Ground 100 mesh fine, per ton, paper sacks, not returnable.....             | \$3.50 |
| Ground 100 mesh fine, per ton, cotton, jute or duck sacks, returnable ..... | \$5.00 |

A credit of ten cents each will be allowed to purchaser on the return in good condition of all cotton, jute or duck sacks, freight prepaid, to our plants at Concrete, Washington. Minimum carload is 25 tons.

The plants of both these lime companies are located on the Great Northern Railroad at Concrete, Skagit County, Washington.

Send orders to either **Superior Portland Cement Co., Northern Bank Bldg., Seattle, Wash.**



# IRRIGATION

Adequate, available moisture  
at all seasons.

## THE BOISE IRRIGATION PROJECT.

By H. A. Lawson, Boise, Idaho.

In the formal dedication here October 4 of the Arrowrock Dam, the highest in the world, there was added to agricultural America. The Boise Irrigation Project, one of the largest in the United States. The total area is 243,000 acres,—an empire in itself—tributary to and in close proximity of Boise, Idaho's capital.

The construction of this massive arch wedge of solid concrete weighing over a million tons to a height of 351 feet between mountains a mile high, is the crowning feat of scientific engineering accomplished by the United States Reclamation Service under the direction F. E. Weymouth, supervising engineer; Charles H. Paul, construction engineer, and James Munn, superintendent of construction. It is their master piece.

### Arrowrock Dam A Reality.

Impounded behind it are the waters that raise mortgages. Four years ago it was started to be completed at the end of six years,—cost \$7,500,000. Today it stands completed in four years, two years ahead of time, at a total cost of \$5,000,000, or \$2,500,000 less than estimated. From 30 to 60 miles below it lie the rich, fertile valley lands whose reclamation it has made possible.

Testimonial of the wise policy of the government in building this great dam is given on its completion. In the saving of crops and irrigation reputation of Idaho, in this, the driest year almost in history here, its total investment has been paid back. It is only the storage water behind it that saved the crops of a vast territory, for the government was able to sell its water for thirsty lands, the crops on which would otherwise have been ruined. The concrete in the dam, if piled in a column 10 feet square, would rise to a height of 29 miles. Thundering from its outlets, always under perfect control, is the normal flow of a mountain river. Towering arc lights on pedestals illuminate its crest.

The artificial mountain lake backing it floods a canyon to a depth of 200 feet, for a distance of 18 miles when filled to its capacity. Under these waters still stand flooded farm buildings, orchards and fences, which on clear days are visible from and under the surface.

The Boise project proper was segregated from the public domain some years ago. The great Snake River finds its source in the Teton mountains on the border elevations of the Idaho-Montana line. It flows in a southerly direction into the eastern Idaho basin, makes a sweeping curve west and slightly north, crossing the entire southern portion of the state, a distance of over 300 miles, and continues on as it bends north to the Columbia River, into which it empties. The Boise River is one of its tributaries in the western part of the state. From the Snake and its tributaries level and plateau lands, once the home of the jack rabbits and coyotes, have been reclaimed until the basin has become dotted as a rich agricultural belt.

The Boise River has its source in the Boise mountains to the east and north of the city by that name. Boise itself is backed against the foothills of these mountains. The river, after cutting its way through deep canyons, flows onto the valley below which spreads out to the south at the feet of the city. This plain is made up of the Boise Valley proper and a series of bench lands rising and dropping away to the Snake River Valley. It is this area that forms the Boise Project, dotted with several important cities and towns, including Boise—the capital of the state, Nampa and Caldwell.

Settlers were permitted to homestead these lands under the reclamation act early in 80 acre tracts or units, and they have been so content with their entries that they have held and improved their lands. Of the 243,000 acres, 18,000 acres of land of the New York Canal company is included and 36,000 acres of so-called doubtful land. Excluding the 36,000 acres of doubtful land, there is left 207,000 acres, 67,000 acres of which has been entered or filed upon, 492 acres withdrawn from entry, 15,721 acres of state school land, and 122,556 acres of private lands.

All of the lands have an elevation of 2500 feet above the sea level. The average annual rainfall is 13.5 inches. The average range of temperature is from 28 to 97 degrees and zero weather is very rare. The irrigation season is from April 1 to October 31, 214 days.

The soil is clay loam, light sandy loam and sandy loam. It is considered very rich, formed as it is from a volcanic ash and having the necessary qualities to make crop yield abundant. The principal crops are alfalfa (three cuttings), wheat, oats, barley, rye, potatoes and all vegetables, together with fruits.

## CORN GROWING BY IRRIGATION

Benton County claims the record yield of corn grown by irrigation, said to be over 130 bushels per acre. The exhibit from this county at the Washington State Fair, North Yakima, showed some very choice, plump corn. The farmers in the Yakima Valley have discovered a new gold mine in their great yields of high quality corn, grown under proper methods of irrigation. With three cuttings of alfalfa and a yield of 80 to 100 bushels per acre of corn, Mr. H. C. Davis says the feed problem for dairymen solves itself. For the same reason, Mr. A. D. Dunn sees great possibilities for the feeders of cattle, hogs and sheep.

A judicious amount of water will produce large crops of corn. In a recent issue of the Yakima Daily Republic, Mr. Davis said: I have corn that will go 75 bushels to the acre that never had but one irrigation, and that by running water down every other row. In appearance it is as fine corn as you will find on the place, but I expect the other corn to average 85 bushels to the acre. I wanted to experiment on the economic use of water and made this test. I cultivated it more and watered it less. I believe that the farmers of the valley should make experiments

in the use of water every year of some sort and learn how to handle water to get the best results. One way we can save water is to grow more corn and less alfalfa. A fine corn crop can be raised on a third the water that will be needed for an alfalfa crop.

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## THE WAY TO LIVE.

The way to live! Before I die  
That is the art that I would know;  
To be myself to every eye,  
To let my thoughts in action show.

To spurn the popular veneer  
And wear the simple garb of truth,  
Nor seek to hide each passing year  
By posing in the dress of youth.

To live as what I really am,  
Not what I think may please the  
throng,  
To turn my back on every sham,  
Indifferent never to a wrong.

The way to live! Before I die  
This is the art that I would learn,  
To be myself to every eye,  
To claim no joy I cannot earn.  
Detroit Free Press.

## RIGHTING WRONGS.

War is the rod in the hand of Almighty God, laid on the backs of disobedient children who continually flout Him, break His laws and follow their own wills. Some day the world will wake up to the fact that it is folly to arouse His anger and to invite the lightning of His wrath by such asininity, when it is very much more comfortable and pleasant to live in harmony with Him and to enjoy the favor of His approval. He showers His richest blessings on those who seek Him and who try to order their lives in accordance with His commands.—James W. Johnson.

## TWO GOLDEN DAYS.

There are two days of the week upon which and about which I never worry. Two care-free days, kept sacredly free from fear and apprehension. One of these days is yesterday, with all its cares and frets, with all its pains and aches, all its faults and blunders, it has passed forever beyond the reach of my recall. I can not undo an act that I wrought; I can not unsay a word that I said on yesterday. All that it holds of my life, of the wrongs, regret and sorrow, is in the hands of the Mighty Love that can bring honey out of the rock, and sweet waters out of the bitterest desert—the love that can make the wrong things right, that can turn weeping into laughter, that can give beauty for ashes, the garment of praise for the spirit of heaviness, joy of the morning for the woe of the night.

Save for the beautiful memories, sweet and tender, that linger like the perfume of roses in the heart of the day that is gone, I have nothing to do with yesterday. It was mine; it is God's.

And the other day that I do not worry about is tomorrow. Tomorrow, with all its possibilities, adversities, its burdens, its perils, its large promise and poor performance, its failures and mistakes, is as far beyond the reach of my mastery as its dead sister, yesterday. It is a day of God's. Its sun will rise in roseate splendor, or behind a mask of weeping clouds. But it will rise. Until then, the same love and patience that hold yesterday and hold tomorrow, shining with tender promise into the heart of today.

I have no possession in that unborn day of grace. All else is in the safe keeping of the Infinite Love that holds for me the treasure of yesterday. The love that is higher than the stars, wider than the skies, deeper than the seas. Tomorrow—it is God's day. It will be mine.

There is left for myself then, but one day of the week—today. Any man can fight the battles of today. Any woman can carry the burdens of just one day. Any man can resist the temptations of today. O, friends, it is only when to the burdens and cares of today carefully measured out to us by the Infinite Wisdom and Might that gives with them the promise, "As thy day, so shall thy strength be," we willfully add the burdens of those two awful eternities—yesterday and tomorrow—such burdens as only the mighty God can sustain—that we break down. It isn't the experience of today that drives men mad. It is the remorse for something that happened yesterday, the dread of what tomorrow may disclose.

These are God's days—leave them with Him.

Therefore, I think, and do, and I journey but one day at a time. That is the easy day. That is the man's day. Nay, rather, that is our day—God's and mine. And while faithfully and dutifully I run my course, and work my appointed task on that day of ours, God, the Almighty and All-loving, takes care of yesterday and tomorrow.—Robert J. Burdette.

## BULB FLOWERS.

A wealth of bloom is in store for any family with a little push and enterprise, in this coast section, by means of the bulb flowers, such as hyacinths, tulips, narcissus, daffodils, jonquills, lilies, peonies, gladiolus, and many others. Those who have none of these will do well to get a start by doing some planting this month. Many of our readers who have some of the classes mentioned will add a few more this season, and a few more next year.

The bed for planting any of these should be well enriched and thoroughly pulverized, similar to the condition required for a good potato or cabbage crop.

## Hyacinths and Tulips.

Hyacinths are among the most popular and satisfactory hardy flower bulbs grown. Their wax-like bell-shaped flowers, borne in buxom trusses, are of matchless beauty and also delightfully fragrant. The colors, shades and tints are wonderfully varied, from purest white through blush, pink, rose, etc., to deepest red and from daintiest porcelain through blues to black purple, from cream through yellows to orange and rosy apricot, etc. Hyacinths succeed with every one and may be had in flower throughout the winter, grown either in pots or soil or glasses of water.

Double tulips have massive flowers of brilliant and varied colors, shades and markings, and being double, the flowers last much longer in bloom than single varieties and, in consequence, when singles and doubles are planted in conjunction, the "time of the tulips" is greatly prolonged. Double tulips are beautifully adapted



Olympic

WHEAT  
HEARTS

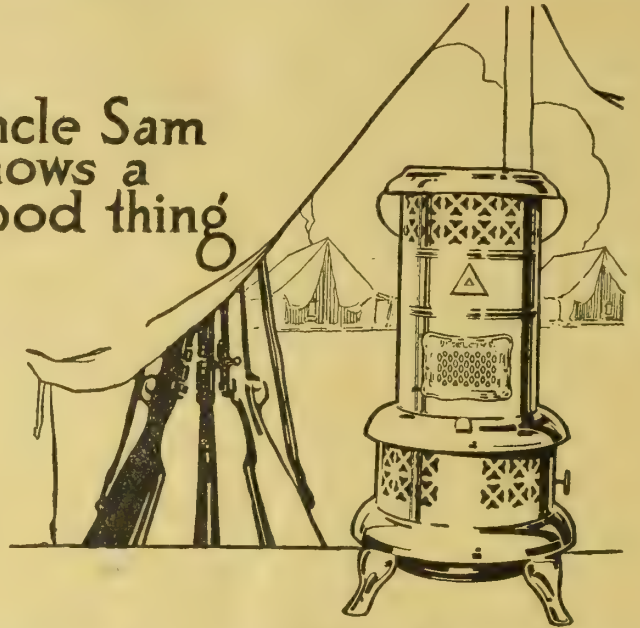
The little hearts of Wheat A tempting breakfast dish, easily cooked. pound cartons.

Sold by all Grocers.

The Puget Sound Flouring Mills Co.

Tacoma, Wash.

Uncle Sam  
knows a  
good thing



## Perfection Oil Heater

Tents in the Model Camp, U. S. Marine Corps, P. P. I. E., San Francisco, 1915, are equipped with Perfection Oil Heaters. Smokeless and odorless. Dealers everywhere.

For best results use Pearl Oil

Standard Oil Company

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WITH EVERY  
ADVANTAGEHeywood  
Mattresses

are more than ordinary mattresses.

Each Heywood Mattress comes separately wrapped. It has not been handled—it has never been out on trial.

It is absolutely guaranteed to give satisfaction or you receive a new mattress.

Priced Reasonably At  
\$12.00, \$15.00 and \$18.00

Made By  
HEYWOOD BROTHERS AND  
WAKEFIELD COMPANY  
Portland and Seattle

Sold By  
All Best Dealers

TEST  
OF 21  
YEARS

The Northwest Grocery Company has been and is doing a strictly cash business with 10,000 satisfied customers. Why not you? Your mail order will receive the same careful attention as though you came in person.

## OUR CATALOG

Gives you lowest prices on reliable Groceries. We pack and deliver to the freight depot free. Send postal today for our catalog and further information.

Northwest Grocery Co.

1302-4 Commerce  
TACOMA WASH.

## A. S. Johnson &amp; Co.



1142 C Street Tacoma, Wash.

WANTED—To hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.

WANTED—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.



for beds on the lawn, in the garden, and for mingling in clumps of a dozen or more around the edges of shrubbery.

**Narcissus, Daffodils and Jonquils.**

Among spring flowering bulbous plants the narcissus family—which includes daffodils and jonquils—is one of the most important and of world-wide popularity. The recent wonderful creations in the way of new varieties having awakened a new interest amounting to enthusiasm with flower lovers.

They may be grown in garden beds, among hardy plants in herbaceous borders, or "naturalized," that is, grown as if wild in outlying portions of the lawn or grounds, on terraced slopes, stream side banks and along semi-shaded paths.

The early sorts commence blooming in March, some in favored locations, even in February. Their waving masses of silver and gold are not only enchantingly beautiful but doubly welcome appearing as they do just after bleak winter. With a selection of mid-season and late flowering kinds an endless succession of bloom may be enjoyed well into May. As cut flowers Narcissus are especially useful, being of lasting quality and vasing beautifully.

#### Peonies.

Within the past few years these magnificent hardy herbaceous plants have been brought into very prominent notice because of the great improvement in varieties. In these newer sorts the flowers have attained immense proportions, reaching in some instances the large size of seven to nine inches in diameter and five to six inches in depth. The range of color is also so varied that almost every tint of pink, white, red, crimson and even yellow is comprised in the list. The vigor of the plants have been so improved that stems two and one-half to three feet in length, and sufficiently strong to support the immense blooms, are now grown. Peonies are of practical, permanent value, continually increase in size and profusion of bloom, and pay a generous annual dividend in the way of an enormous crop of magnificent fragrant blooms.

#### Lilies.

Lilies are matchless among hardy garden plants for stately habit,

beauty of form and variety of color. They commence flowering in May and with the various species maintain a continuous and unbroken succession of bloom until autumn. They are also excellent subjects for the shrubbery border, according to such authorities as Peter Henderson.

Most lily bulbs, being of late maturity, are not ready before October and November (the best time to plant them). Where the ground is liable to freeze up before the late lilies arrive it should be mulched with 6 to 8 inches of leaves or manure so the bulbs may be planted on arrival.

#### Lily of the Valley.

The lily-of-the-valley is one of the most admired and useful plants grown; the modest bell-shaped flower of purest white on long stems are highly prized for cutting purposes; for flowering in pots in the winter they are exceedingly well adapted and will last several weeks in beauty. By taking them in at intervals a succession of flowers may be kept up all winter. They are also forced in immense quantities, but they are the most charming when grown in large patches, in partially shaded localities around the lawn, near the borders of streams, lakes, etc., being perfectly hardy.

#### SAUER KRAUT.

Use 1 to 3 quarts salt to 20 gallons shredded slaw. Remove outside leaves and hard core of cabbage. Shred finely. Line the keg with the larger leaves on the bottom and sides as you fill it. Put in a 3-inch layer of shredded cabbage and sprinkle with 4 or 5 tablespoons salt. Continue to repeat this process, lining with the large leaves. Pound it all down well until the cask is full and covered with the brine. Cover with the large leaves and a board cover to fit inside the cask. Weight this cover down with heavy weight so it will keep the cover level. It is necessary that all the cabbage be covered with brine at all times. Keep in a cool, dry cellar three weeks to a month. Remove the scum and see that the kraut is well covered with juice. When the weather is warm the kraut will cure in 16 to 18 days, when it is ready for use or for canning.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### DAIRY BARN AND MILK HOUSE.

The Washington Agricultural Experiment Station has recently published a Popular Bulletin (No. 95) on "The Dairy Barn and Milk House, How to Construct Them," by R. E. Hundertmark and A. B. Nystrom, prepared for the purpose of giving the dairy farmers a few helpful and practical suggestions as to the materials, methods of construction and cost of construction of dairy barns and milk houses. It contains a very comprehensive discussion of the types and sizes of dairy barns suitable for the various needs of dairy farmers, together with a discussion of the site, lighting, and ventilation that are conducive to sanitary conditions about the dairy barn and milk

house.

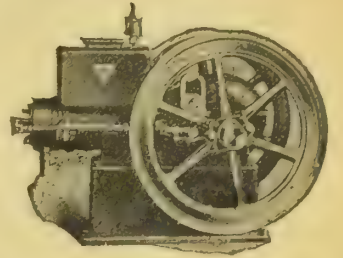
Bulletin No. 95 was prepared to answer the requests received from many dairy farmers of the state for plans and estimates on dairy barns for various sized herds. It is profusely illustrated with photographs of model dairy barns and detailed plans and bill of materials for both dairy barns and milk houses of the various types. It also contains a discussion and illustrations of dairy barn equipment.

This is a bulletin which should be in the hands of every dairy farmer or prospective dairy farmer of the state. A copy may be obtained free of charge by requesting same from the Director, Washington Agricultural Experiment Station, Pullman, Washington.

## THE DE LAVAL LINE LEADER OF THEM ALL

The "ALPHA" ENGINE for gasoline or distillate has its place on every dairy farm or orchard, for pumping water, running cream separators, grinding feed, or any other work generally done by hand.

The ALPHA starts direct from magneto without spinning. No batteries to get out of order, and it is a DE LAVAL product.



### Alpha Combination Power Spray Outfit



Equipped with a Duplex Vertical Cylinder Pump with Automatic Pressure Controller direct. Connected to a 2½ H. P. Alpha Engine. This Automatic Controller does away with relief valves, and when the desired pressure is reached the Pump ceases operation and Engine idles. The Engine, Pump

and Tank are on an all-steel frame ready to be mounted on wagon trucks. Just what you are looking for. Write today for catalogues A-3 and A-5.

DeLAVAL DAIRY SUPPLY CO.,

Seattle, Wn.  
1016 Western Ave.

San Francisco.  
101 Drumm St.,

### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

#### MOUNTAIN VIEW FARM

Mt. Vernon, Wash.

Otto Rundgren, Prop.

### Registered Jerseys

BERKSH  
SWINEIE

Some choice cattle out of St. Lambert and Adam Stevens breeding. Pure bred, prize winning Berkshires, Shire horses and pure-bred poultry. Write for prices.

#### A. G. WOODWARD

Route 1, Box 12 Fairbanks, Wash.

### Make \$30 to \$60 Weekly

Selling our new unequalled gasoline table and hanging lamp for lighting city and rural homes, stores, halls, churches. Most powerful light known. ABSOLUTELY SAFE.

#### WE LOAN YOU SAMPLE

More brilliant and many times cheaper than gas or electricity. Guaranteed five years. Everyone a possible customer. No experience necessary. Exclusive territory free. Write today.

SUNSHINE SAFETY LAMP CO.  
704 Factory Bldg., Kansas City, Mo.



### Electric Light Farm

## A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tubercule tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

### Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock.

Also Registered Ayreshire Bull Calves at reasonable prices.

F. I. MEAD,

524 California Bldg.  
TACOMA, WASH.

## Guernsey Cows

Are recognized as large and persistent milkers.

The annual production of the dairy cows of the United States is said to be around three thousand

pounds of milk.

3770 tested Guernseys average 8673 pounds of milk.

It will be to your advantage to write for information.

## THE AMERICAN GUERNSEY CATTLE CLUB

Box 20, Peterboro, N. H.

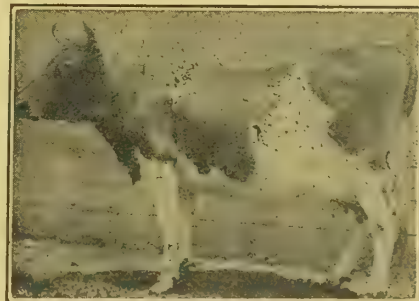
### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

#### FISHERBROOK FARM

Box 34, Milltown, Wash.

GUERNSEYS — Some very choice bulls out of Faithful Boy, sired by Old Faithful. Price reasonable. Full particulars on request. Jacob Zweegman, Lynden, Wash., R. F. D. 1.





**GUERNSEY RECORD SALE.**

81 Head Sell For \$43,235, Or An Average of \$533.67.

On Wednesday, September 15th, at Florham Farms, Madison, N. J., Mr. Jos. L. Hope offered 81 head of Guernseys, which brought at auction \$43,235.00, this being an average of \$533.67.

The highest price, \$2500, was paid for Florham Gold Lassie, a beautiful young cow, while the young bull, Florham Admiral, but a few months old, brought \$825. Two other young animals were secured as herd leaders, one at \$700, and another at \$500.

Fully 400 persons were present, and among them a great many of the prominent breeders of Guernseys. President Fisher and Messrs. Marsh, Shoemaker, Scoville, Gill and Phillips, of the Executive Board of The American Guernsey Cattle Club, were present. Messrs. Rice and Lincoln from Mass.; Mrs. Holton and Messrs. Roberts, Crozer and Fretz from Pa.; Dr. Russell and Messrs. Hotchkiss, White and Beardsley from New York.; and Messrs. Leeds, Haskell and Lindabury from New Jersey were seen around the ring. Mr. Louis R. Gray of Rio de Janeiro was present at the sale and secured a Guernsey to be shipped to his country.

The success of the sale certainly attested to the value and intelligent work which Mr. Hope has given to the breeding and development of his animals during his 30 years association with Guernseys.

The sale bore testimony to the executive ability and foresight of Mr. Hope and Mr. Herrick in its management, and Col. Bailey auctioneered.—A. G. C. C.

**AYRSHIRE COW CHAMPION.**

Lily of Willowmoor 22269.

This cow, bred and owned by J. W. Clise, Redmond, Washington, has just finished her fifth consecutive official record for advanced registry, making a cumulative record of 84,991 lbs. of milk and 3,362.35 lbs. of fat, with 3.84% fat average for the five years, making her the Five Year Champion of the breed.

This record is worthy of study, in that it shows to a remarkable degree the staying quality of the Ayrshire cow, giving an average of 16,991 lbs. of milk and 672.47 lbs. of fat for five years, she now stands first place as a long term cow.

She is due to freshen October 12th, and had she not been bred to calve within the cumulative requirement she would undoubtedly have again led the world's Ayrshire record for a single year, as her record under these conditions is only 426 lbs. of milk less than the present record of the world's champion Ayrshire for milk and is 37.96 lbs. more fat.

The record is valuable as showing the constitution necessary to give a remarkable milk and butterfat record, with a calf each year for five consecutive years.

To give that amount of milk annually and raise a calf each year, a cow must have constitution, which is characteristic of the Ayrshire breed.

C. M. WINSLOW.

Brandon, Vermont.

**VALUE OF BREEDER'S ASSOCIATIONS.**

It is only about 10 years ago since the Guernsey breeders at Waukesha, Wis., organized with 12 members. Today they have nearly 100 members and own about 2000 registered Guernsey cattle or nearly 10 per cent. of the registered cattle in the United States. They have attracted buyers from all over the country, built fine homes and farm buildings, have sold nearly half a million dollars worth of registered cattle and dairy products the last year. Breeders of leading dairy breeds in Washington will soon have made an equally laudable record. Mr. Will Forbes, writing about the advantages of a breeding center in the Guernsey Breeders' Journal, suggests this plan:

That twenty or thirty farmers who are not too widely separated, or even a larger number, depending upon the number of cows in the herds, hold a meeting and all agree to breed a certain breed, such as Guernseys, Jerseys, Ayrshires or Holsteins. Then the territory in which these members live is divided into four blocks. We will say for example that there are eight members to a block. A committee elected or appointed from the thirty-two members in this case are instructed to buy four bulls, one bull to be stationed in each block. The bull is kept and cared for by some member in the block, centrally located if possible. He is paid a certain sum each month for feeding and caring for the bull. The bull remains in this first block for two years or until his heifer is old enough to breed, when the bulls are rotated on block. For example, if we call the blocks A, B, C and D, the bull in Block A is moved to Block B, and the second bull from Block B to Block C, etc. The bulls remain in their new blocks about two years when they are again rotated one block.

**ANOTHER 100. POUND COW.**

For the Puget Sound Herd and Chimacum Valley.

This district claims more 100-pound cows than all the rest of the state combined.

Woodcrest Maud, No. 89753, at the age of 8 years and 8 months, calved the 14th of August, and for the first 30 days she produced 2771.6 lbs. milk and 104.7 lbs. butter. The last 7 days of the test she made 26.4 lbs. butter and was increasing all the time, but the tester had to go to another place and she would have made a much larger record if she had continued. But as she is in the yearly test she will make it up during the year. Her best day's milk was 103.6 lbs. and 7 days 703.8 lbs. She is the cow that at the age of 2 years and 4 months held the world's milk record in the 30 day class for her age.—WM. BISHOP per John Van Trojen, Jr.

**DAIRY CATTLE EXHIBIT.**

At Western Washington Fair, Puyallup.

The quality of dairy cattle at the Western Washington Fair, Puyallup, was most excellent, though the leading breeds were without much competition. The Jerseys were shown by Mr. Charles Richardson and Mr. John Snell. The Jersey bull, Pogis Toronto, purchased by Mr. Richardson from the Hood Stock Farm, Lowell, Mass., represents a high type of this breed, being backed by high records of very economical producers. The cows and calves in the Richardson herd attracted a great deal of attention. The awards were:

Jerseys—Bulls, 2 to 3 years old: Chas Richardson, Tacoma, first; John Snell, Puyallup, second. Bulls 1 to 2 years old: F. W. Corwin, Puyallup, second; no first. Senior calf: Charles Richardson, first. Cows, 3 years old and over: Charles Richardson, first. Heifers, 1 to 2 years old: Charles Richardson, first and second. Heifer, senior calf: Charles Richardson, first and second. Herd: Charles Richardson.

Best grade of dairy cow in milk: John Snell, first; F. W. Corwin, second.

Best grade of dairy heifer in milk: John Snell, first.

Holsteins.

Van Woerden & Fisher, Thomas, Wash., showed some very choice animals of this breed. Awards:

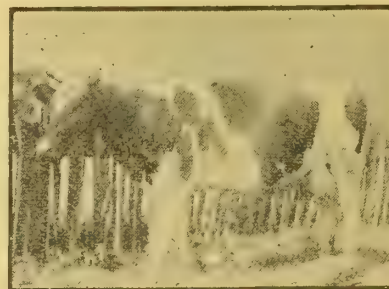
**Puget Sound Herd Holsteins**

HERD SIRES—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

"Quirinus Cornucopia," whose six of the first daughters to be tested, have averaged 19 lbs. butter in 7 days as 2-year-olds. They are all making good in yearly tests including "Chimacum Wayne Boon 2d," 2 years old. She has just finished a years test of 21,572.1 lbs. milk and 881.68 lbs. butter. This record is the highest in the west for both milk and butter. She is a sister on her dams side to "Sir Chimacum Wayne," the world's greatest average record milk and butter bull. He is also brother on his sires side to the world's record heifer "Aaggie Nena Cornucopia."

Young bulls up to one year old are now being offered for sale from the above sires.

WM. BISHOP, Prop.  
Chimacum, Wash.



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

**SKYKOMISH VALLEY HERD  
HOLSTEIN CATTLE**

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

HERMAN STEFFEN  
MONROE, WASH.

**Cascade International Stock Show**

THE GREAT MID-WINTER STOCK EXHIBITION

\$15,000.00 in Premiums

For Premium List Address

S. B. NELSON, Secretary.

Pullman, Wash.

Show—North Yakima, November 22-27, 1915

**Brady  
Farm  
Guernseys**

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

**CASH FOR CREAM**

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.



Senior bull, Van Woerden & Fisher, first, Tony Roetger, Puyallup, second. Bulls, senior calf: Van Warden & Fisher, first and second. Cows, 3 years old: John Snell, Puyallup, first; Van Worden & Fisher, second. Heifer between 2 and 3 years old: Van Warden & Fisher, first. Heifer, 1 to 2 years old: Van Warden & Fisher, first; John Snell, second. Senior, cow and junior calf: Van Worden & Fisher, first. Herd: Van Worden & Fisher.

The sire in the Van Woerden & Fisher herd was Greenbank's Midnight, out of Mutual Forbes De Kol, a high scoring dairy type and good animal. Cows shown were: Fidessa Fleur, Clothilde Ryaneta De Kol Lady, Marie Jewel Pontiac and Gerben Segis, out of King Segis Sir De Kol Korndyke. Heifers shown, Chenacqua Tobes De Kol Ormsby 2d, Belle of Thomas, whose sires dam and grand dam average 28.21 lbs. butter in 7 days. Louise Lil De Kol Korndyke, out of Model King Segis Korndyke, grand champion at Oregon State Fair in 1913. This herd showed up well, attracting much attention, being in fine show shape.

#### Guernseys Shown by Dr. Willis.

The valuable registered Guernsey herd of Dr. Park Weed Willis, of Seattle, is headed by the Guernsey sire, Royal Combination of Westmoreland 24386. His sire, Glenwood's Combination 5th, was first prize senior and grand champion bull 9 times at principal shows. His dam is Royal Beauty of Clairmont, whose record is over 700 lbs. butter a year, test 5.66 per cent., a most economical producer. This sire is a valuable acquisition to the Guernsey breeders of the Pacific Northwest. His young calves have excellent markings. The young bull, Mythop's Sequels Butter Cup of Vashon, a very choicely bred animal, together with seven other cows and calves, were shown at the Western Washington Fair, Puyallup, and attracted much attention, winning all prizes offered for the breed.

#### Grades.

Mr. John Snell, Puyallup, Wash., showed a good working dairy herd composed of heavy milking grade Holsteins and a number of registered cattle on which he was awarded well deserved honors. In the course of a few years Mr. Snell will be milking only pure bred. He has found by experience that he cannot afford to use any but pure bred sires of good ancestral records and breeding in line of known production he can fix a definitely accurate value on surplus stock and command the price.

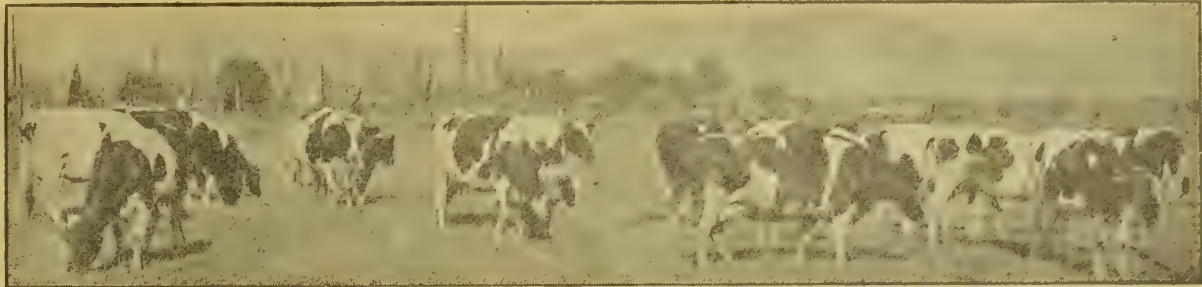
#### ABORTION REMERY, METHYLENE BLUE.

One of the most promising methods for eradicating abortion was discovered by Dr. F. A. Rich of the Vermont Experiment Station two years ago. It consists in administering Methylene blue to affected animals in the following manner:

Give each cow one-third of an ounce of methylene blue in a capsule nights and mornings for seven consecutive days, then cease giving it for four weeks, and then give the same doses for another seven days. Continue to alternate these dosing and resting periods throughout the entire gestation period. Treatment should be given shortly after pregnancy begins. Methylene blue—the medicinal grade should be employed—costs about \$2.50 a pound. Thus each week's treatment will cost 50 cents, and eight treatments being required in one lactation period, the total cost mounts up to \$4 per cow. While this is relatively expensive, it is much less so than allowing the disease to run its course. The medicine is best given in capsules with a balling gun, such as can be procured at any drug store.

Methylene blue is perfectly harmless. It will do no harm to give

## Holsteins of Pontiac and Hengerveld Dekol Breeding



The high quality of our Holsteins was again attested at the sale September 15th, at Snohomish, when buyers made prices which were very satisfactory to us. That we have high quality is more than fully proven and our cattle are all in prime order. The young bulls we offer for breeding are of such type and with such high records in their pedigrees as would suit for our own use did we need them.

We can also spare a few more cows whose records and prices may be obtained on application. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

There is a growing demand for dairy stock. Buyers are particular about quality. It is a good time to get started right, while the butter market is becoming quite satisfactory.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

twice the dose recommended except for the additional cost, says a writer in Successful Farming.

#### BOTTLING PASTEURIZED MILK HOT.

That the process of pasteurizing milk in bulk and then bottling it while hot in hot steamed bottles produces as satisfactory bacterial reductions as pasteurizing the milk in bottles, is one of the conclusions of a recent investigation which the Department of Agriculture has conducted on this subject. The investigators found that the new process eliminated the danger of bottle infection and had the further advantages of saving the loss in milk caused by evaporation over the cooler and of allowing the use of ordinary cardboard caps.

#### THREE COWS FOR \$1000.

Wm. Todd & Sons, of North Yakima, recently sold three Holstein cows to the Carnation Stock Farm for \$1000, one valued at \$400, and two each at \$300. This was at private sale and is additional evidence of high breeding of fixed type through a valuable sire. Wm. Todd & Sons are also very careful herdsmen and every animal which leaves their place bears the stamp of high excellence, the sure sign for satisfactory service.

#### PURE MILK CONTEST

At Washington State Fair.

There were 22 entries in the pure milk contest at the Washington State Fair.

G. G. Carman, State Dairy Inspector and A. D. Fish, District Deputy, were in charge and the scoring was based on the following points: Bacteria found, flavor and odor, visible dirt, fats, solids, not fat, acidity, bottle and caps.

The results of the contest were as follows:

J. D. Farrell, Renton, 94.75; W. J. Langdon, Sumner, 93.75; C. G. Henkle, Opportunity, 93; W. V. S. Robb, Kent, 92.85; T. J. Owens, Kirkland, 92.35; John Steele, Renton, 91.25; C. W. Orton, Sumner, 90.50; T. Lalole, Renton, 89.70; L. Hanson, Elliott, 88.25; A. B. Funnell, Seattle, 88.75; P. R. Andrews, Stillwater, 85; A. Lund, Renton, 83.75; Louis Imhoff,

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312. Our 2-year-old Nena Cornucopia produced in 30 days 2733.3 lbs. milk and 95.037 lbs. butter.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE, CHIMACUM, WASH.**

Kindly mention this paper

## GLENDALE CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

**GLENDALE CREAMERY CO.,**

**D. S. Troy, Manager.**

**Chimacum, Wash.**

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## COTTONWOOD GROVE STOCK FARM

### CHOICE HOLSTEINS



Our 1914 bulls are being closed out to make room for the other youngsters. Buyers who are putting off the purchase of herd sires until fall should write us now as we can save them 50 cents on the dollar. Our bulls have the Homestead, Pontiac and Johanna breeding, the latter being closely related to Finnerne Pride Johanna Rue, the queen of all breeds, with butter record of 1470 lbs. in 365 days.

**ALBERT JOHNSON**  
SCAPPOOSE, OREGON



Thomas, 87; A. Zeeuw, Thomas, 71; James Batstone, Orting, 80.50; Sunrise Dairy, Everett, 74.25; Pioneer Alpine Dairy, Everett, 71.50; Everett Dairy, 50; Meadow Dairy, Everett, 57.75; Independent Dairy, Everett, 41.55; Walcott Dairy, Everett, 75.50.

### GUERNSEYS AT P. P. EXPOSITION.

A good showing of Guernseys is promised at the Panama-Pacific Exposition. They are to be judged on October 21st and 22nd.

On the evening of October 22d, The American Guernsey Cattle Club, co-operating with the California Guernsey Breeders' Association will hold a meeting of the Guernsey Breeders of the Pacific Coast. This will be the first instance in which The American Guernsey Cattle Club has co-operated in this manner in this section and it is hoped that there will be a very large gathering and every means will be taken to make the occasion a success. Information regarding where the meeting is to be held may be obtained at the judging arena and at the View Herd barn.

The Guernseys are very ably represented at the Exposition with a View Herd placed there by Mr. Dupee of Edgemoor Farm, Santee, California, near San Diego. This View Herd is headed by Imp. Itchen May King 25174, a bull purchased by Mr. Dupee at the record price of the breed to head his choice lot at the farm.

Dairymen and Guernsey breeders should make an effort to see this exhibit at San Francisco and also to meet the representative of the Club, Mr. C. H. Hurlburt, who is there to render any aid he can in the advancement of the Guernsey interests.—A. G. C. C.

### ROY CO-OPERATIVE CREAMERY ASSOCIATION.

About fifteen years ago Mr. Nelson Murray of Roy, became impressed with the idea that a creamery would be a benefit to both the rural community and to the town of Roy, so he put in a cream separator, and churn, and continued with untiring efforts to get a sufficient number of farmers to increase the size of their dairy herds and to unite in the promotion of a good creamery association. The usual pioneering obstacles finally were overcome, and he at last prevailed upon Mr. Frank Seifert to take over the management about three years ago,

when the present association was incorporated. The capital stock at first was \$1250, with \$5.00 per share and members limited to twenty shares each; there being then 42 members. The success of the association is demonstrated by an increase in membership to 125 with shares at \$10 each. The present new building illustrated, was completed last June at a cost of \$9,000, including full equipment of latest modern machinery and a cold storage plant, direct expansion Brunswick Pacific Ice machine capable of producing 1800 lbs. ice per day.

The price of cream has been high enough so there was no need of making butter the past few months, but as soon as the ready cream and butter markets are not satisfactory a high scoring butter will be made and put into the cold storage room.

A local bank affords opportunity to amply finance the members of the association on their stored product when needed.

The association is now sufficiently strong to maintain a high quality product. The cream as a rule comes in good shape, "sweet" and when any cans are off in flavor the product is marked "sour" and the price on that particular lot reduced by about 4c per pound.

The present officers are John Whitehead, President; M. H. Thompson, Secretary; Geo. D. Perry, Treasurer; Frank Seifert, Manager, who together with J. A. Simmerman make up the board of directors; and Mr. Glen Kent is the efficient butter maker.

The members have full confidence in their management, and are working harmoniously together for the general success of the association.

Several have bought pure bred sires to head their herds. Holsteins, Jerseys and Guernseys are all represented and each farmer is wisely inclined to stay with the breed for which he has laid the foundation.

The great problem before the membership at the present time is to reduce the cost of the feed bill. They will sow more clover and vetch with oats or other grain in the fall and put in silos to care for the spring cutting. Their experiments also prove that good ensilage corn can be grown and preparations for considerable planting next spring is now being made.

At a recent meeting which was addressed by Messrs. Henderson and Day, State dairy officials, and by the Editor of this paper, a \$10 prize was

The following letter talks—read it!!!  
Sept. 17th, 1915.  
Albers Bros. Milling Co.  
Seattle, Wn.

Gentlemen:  
Will you try to make arrangements with some store in Port Angeles and have them handle your Calf Meal? I have used three other brands and ALBERS, and I find the calves do better on ALBERS and they also like it better than any of the others. Mr. E. E. Nichols has opened a feed store in Port Angeles and I would like to see him handle your Calf Meal. Yours truly,  
Garfield Davis,  
Box 854 Port Angeles, Wash.

Mr. Davis knew just what he was talking about when he wrote this unsolicited letter. He knew from actual experience.

ALBERS CALF MEAL, the basis of which is **Ground Oats**, is a perfect substitute for whole milk and is manufactured for a purpose—to save the dairyman money and enable him to build up his own herd. Ask your dealer. The price is right.

## Albers Calf Meal



## Albers Bros. Milling Co.

SEATTLE  
TACOMA

LOS ANGELES

PORTLAND  
SAN FRANCISCO

## Moxee Valley Holstein Farm

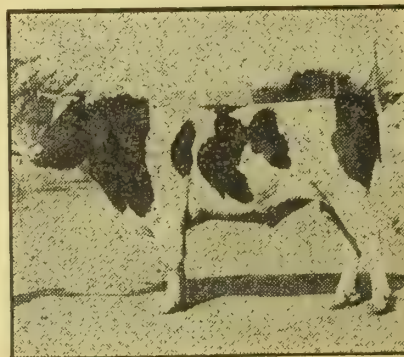
A NICE BUNCH OF YOUNG HOLSTEINS FOR SALE

Cows on official test are showing a high butter fat record.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

## TYSON & McKELHEER

Moxee City, Wash.



### VALLEY VIEW DAIRY FARM

Won more first prizes than any other exhibitors at the Washington State Fair, including Grand Champion bull.

Won first prize in 48 hour production contest, both on 3-year-old and on 2-year-old heifer.

Thirty head of this class of females will be sold by myself at the Cascade International Stock Show, North Yakima, Friday, November 26.

For particulars, description and price, write,

H. C. DAVIS, Granger, Wash.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## GUERNSEY BULLS

In our recent shipment from the east are 2 very choice young bull, descendants from Gov. of Chene breeding which we offer,—a rare opportunity for high record and very choice stock. After inspecting many herds our selection was made from a noted importer of Guernseys.

### DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

AUGUSTINE & KYER,  
First St., Seattle, Wash.

## Home of High Class Guernseys

(Dr. Park Weed Willis, owner)

Herd sire carries best blood of Guernsey breed including Glenwood Boy of Haddon and Governor of the Chene. His dam has a record of over 700 lbs. butter in one year.

A very few choice bull calves for sale. Address

ORCHARD HILL FARM  
Redmond, Wash.



Creamery building at Roy, built of hollow tile with full modern equipment; value, including ground, \$9,000.



voted to be paid each month for the highest scoring cream.

### MILKING CONTEST, WASHINGTON STATE FAIR.

In the 48 hour milking contest at the Washington State Fair the herds entered were by H. C. Davis, Granger, and John L. Smith, Spokane.

On cows 2 years and under 3 H. C. Davis won first on the cow May Lilu, record milk, 87 lbs., butter fat, 2.96, total value \$1.05. On the cow Pearl, 2nd prize, milk 70 lbs., butter fat 2.44, total \$.906. On cows 3 and under 4 years H. C. Davis won first on the cow Model Bonnie Echo, with record of 124.8 milk, 5.87 lbs. butter fat, total value \$2.172. J. L. Smith was awarded 2nd in this class on the cow Hazelwood Clothilde Ormsby DeKol, milk 90.9 lbs., butter fat 2.50, total value \$.976.

On cows 4 years old and over J. L. Smith took both prizes without competition, the record of first cow, Bracelet Alta Posch Pietertje being milk 138.1 lbs., butter fat 3.71, total value \$1.447.

On the 2-3 year class, J. L. Smith cow Hazelwood Princess Pauline was awarded 3rd. Her record was, milk 52.7 lbs., butter fat 1.93, total value \$.710.

The test was carefully conducted by deputy dairy inspector A. D. Fish of Seattle.

### GREENBANK FARM'S PREMIER SIRE.

Readers generally are elated over the fact that the State of Washington is the home of one of the greatest sires of the Holstein breed. King Korndyke Pietertje Pontiac No. 127, 387, the only son of King of the Pontiacs in the Northwest, enjoys this distinction. King of the Pontiacs is the leading sire of the breed; in fact, he has no rival in any of the dairy breeds. His list of Advanced Registry daughters, now numbering 168, exceeds that of any other dairy sire by over 40 head. His daughter, K. P. Pontiac Lass's 7 day record of 44.18 lbs. butter, stands as a world's record for that length of time. He has more

Korndyke 2d, is a son of Beauty Pietertje Butter King and Clarissa Clothilde Pietertje, who has a record of 32.52 lbs. of butter from 679.5 lbs. of milk in 7 days. As an evidence of the value placed by breeders upon the blood lines of May Korndyke 2d, dam of King Korndyke Pietertje Pontiac, her 2-year old son by an untried sire, sold on September 15th, at Hanford, Calif., for \$4,000; the highest price ever paid at public auction for a bull of any breed, west of the Rocky Mountains. To the student of Holstein breeding, the pedigree of King Korndyke Pietertje Pontiac offers an opportunity for most interesting study, tracing as it does to many of the noted members of the breed, including two of the best sons of old DeKol 2d—the fountain head of producing Holsteins.

Aside from his breeding, King Korndyke Pietertje Pontiac is an animal of exceptional quality, as shown by his picture, which appears in this issue; and, in bringing a sire of this high quality to the State, the Greenbank Farm has done much toward furthering the popularity of this already popular breed in the Northwest.

### CREAMERY PRICES

#### AND MARKETS.

According to the Lynden Tribune butter fat at the Lynden creameries was quoted at 36c on September 9th. The cream supply had become a little short all over the coast section in September owing to the usual dry season of August with short pasture. Besides this is the season when a large number of the dairy cows in this part of the country is being dried up to become fresh during October and November.

The condenseries are not buying freely and some of their patronage will go to the creameries.

The creameries which are in condition to make a first class product and have cold storage facilities at hand can take a considerable quantity of cream even at present market price for the butter will likely be held but a short time, if storage is at all necessary.

Creamery plants like those at Ferndale are now sufficiently large to attract outside buyers who are



King  
Korndyke  
Pietertje  
Pontiac,  
No. 127387.

20 lb. daughters; more 20 lb. 2-year old daughters; and more daughters that have made 30 lbs. with second calf than any other sire living or dead. His list of 10 daughters, with records above 30 lbs. is exceeded by only one other—his sire Pontiac Korndyke. He is the only bull of any breed, who has 100 or more A. R. O. daughters, whose sire and dam's sire each, has over 100 A. R. O. daughters. Collectively, the three have 31 30-lb. daughters; a showing which no other combination can boast. May Korndyke 2d, 26.31 lbs. as a three year old, the dam of King Korndyke Pietertje Pontiac, is a cow of exceptional breeding; her dam, May Korndyke, was the first 3-year-old to make a 30-lb. record, and is one of the three 30-lb. daughters of Joe Gelsche DeKol Burke, the best son of Prilly—the greatest transmitting cow of the world, through her daughters. Beauty Pietertje Prince, the sire of May

after both quantity and quality when in the market for butter.

### HOLSTEIN CATTLE SALE.

OF WESTERN WASHINGTON HOLSTEIN BREEDERS ASSOCIATION, SNOHOMISH, WASH., AUGUST 15.

The second sale by this association, consisting mostly of young stock, was like the first, a decided success. The sellers were prepared to be generous at any point rather than to have the buyers feel they were not getting the worth of their money. On the other hand, considering the general depression prevailing, the sales as a whole were very good. The top price was for the young cow Selah Mercedes, by C. Eldredge, bought by Carnation Stock Farm for \$515.

The following are the consignors,

## GRAND PRIZE

### PANAMA-PACIFIC EXPOSITION

Awarded to

# DE LAVAL

## CREAM SEPARATORS

as the Highest Award has been at every International Exposition since the invention of the Centrifugal Cream Separator in 1878. And likewise as at all previous expositions, all higher dairy product awards at San Francisco have been made to users of the De Laval machines.

### DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

### LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

P. A. FRAKES

Scappoose, Oregon

### Dairymen

We are in position to supply you with REGISTERED COWS or BULLS; also high grade cows and heifers for very satisfactory dairy work. We carry in stock a large herd from which to select, and have established a reputation for square dealing which we will maintain. During the year 1914 we sold 1000 head of cattle and our customers are freely expressing their entire satisfaction.

When in need of live stock, call or write.

### Van Woerden & Fisher

THOMAS, WASH.

(On the Interurban Railway midway between Tacoma and Seattle)

### Ayrshires

Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

### CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

### Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

### PACIFIC COLD STORAGE CO.

N. P. Wharf, Tacoma, Wash.

### Waikiki Farm

Breeders of

JERSEY and Ayrshire CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.



names of the animals and of the buyers.

**CONSIGNED BY C. ELDRIDGE.**

**Females.**

Gladys Selah Mercedes, born June 1912, sold to M. F. Swalwell, Fall City, Wash., for \$355.

Selah Mercedes, April 1912, Carnation Stock Farm, \$515.

Chimacum Glassa 2d, April 1913, M. F. Swalwell, \$450.

Bahama J 2d, January, 1908, Greenbank Co., Greenbank, Wash., \$375.

Lady Netherland Mercedes, June, 1906, Greenbank Co., \$275.

Nena J 3d, March, 1908, M. F. Swalwell, \$300.

Glassa Baker, August, 1910, M. F. Swalwell, \$325.

**CONSIGNED BY WM. BISHOP.**

**Females.**

Lady Aggie De Kol Artis, April, 1910, Greenbank Co., \$210.

Lily Johanna Beets, October, 1909, M. F. Swalwell, \$230.

Heifer calf, May, 1915, Shadinger Bros., Snohomish, Wash., \$115.

Lady Andy May, January, 1914, G. H. Clark, Burlington, Wash., \$165.

Andy May Cornucopia Maderia, March, 1914, T. B. Garrison, Seattle, \$175.

Chimacum Princess Johanna, April, 1914, B. A. Fryer, Sumner, \$310.

Ononis Beauty De Kol, August 1910, C. E. Greaves, Silverdale, Wash., \$210.

Chimacum Ononis Lorinda, February, 1915, T. Yarr, Center, \$105.

Chimacum May Clothilde, November, 1914, T. Yarr, \$105.

Jennie Korndyke Clothilde, April, 1913, T. Yarr, \$240.

**CONSIGNED BY GREENBANK CO.**

**Females.**

Model Pauline De Kol, June, 1910, T. G. Bowen, Snohomish, \$285.

Model Annie of Greenbank, August, 1914, M. F. Swalwell, \$350.

Zozo Marie of Greenbank, January, 1915, T. G. Bowen, Snohomish, \$225.

Rachel of Greenbank, March, 1915, W. E. Nims, Bothel, \$195.

Mooie Segis of Greenbank, August, 1914, M. F. Swalwell, \$325.

**Males.**

Greenbank's Model Pontiac, June, 1914, George Gue, North Yakima, \$300.

Greenbank's Midnight Ayacanora, August, 1914, B. S. Fryer, \$125.

Greenbank Ayacanora Pontiac, July, 1914, A. Wheeler, Snohomish, \$110.

**CONSIGNED BY P. S. GOVAN.**

**Females.**

Aggie Sena De Kol, August, 1911, M. F. Swalwell, \$300.

Inka Queen Susie De Kol, March, 1906, M. F. Swalwell, \$250.

**Males.**

Mains Arilla, June, 1913, W. F. Halrick, Burlington, \$100.

**CONSIGNED BY ALBERT E. SMITH.**

**Females.**

Canary of Fernwood, October, 1910, Carnation Stock Farm, \$490.

Numa De Kol Pledge 2d, September, 1911, Tualco Valley Farm, \$335.

Wisconsin Piebe, May, 1907, Hugh Nisbet, \$180.

De Kol Butter Boy Belle, September, 1909, S. C. Scott, Burlington, \$310.

Ruth Pietertje De Kol Tirania, October, 1905, T. G. Bowen, \$305.

Pietertje Ondine Lansing 2d, February, 1912, Tualco Farm, \$350.

Countess Cherry De Kol 2d, April, 1912, Gus Erickson, Bellingham, \$170.

Stacy Phillis De Kol 2d, February, 1912, Yarr Bros., \$245.

Canary Jacoba De Kol, May, 1911, Tualco Farm, \$170.

**CONSIGNED BY H. NISBET.**

**Females.**

Blossom Paul Lady, October, 1911, M. F. Swalwell, \$320.

Ononis Pietertje Aggie, Harch, 1914, A. Griffith, Seattle, \$170.

Queen Monti De Kol 2d, July, 1913, M. M. Gagnon, Prosses, Wash., \$170.

Korndyke Klaver Princess, March, 1913, J. Carlson, Manette, Wash., \$175.

1909, Greenbank Co., \$410.

Flossie De Kol Beets, October, 1911, J. P. Gagnon, \$180.

**CONSIGNED BY H. STEFFEN.**

**Females.**

Belle Edgely Cornucopia, November, 1913, E. G. Stevens, Monroe, Wash., \$150.

Lalla Edgely De Kol, April, 1914, T. Yarr, \$140.

Jewel Edgely Cornucopia, March, 1914, T. B. Garrison, \$175.

Belle Susie Edgely, March, 1914, H. Nisbet, \$220.

Gerben Denver, February, 1914, Wm. Bishop, Chimacum, \$215.

Miss Mintia Lyons Gerben, December, 1913, T. B. Garrison, \$225.

Miss Korndyke Easie Johanna, February, 1910, Beach View Farm, Oak Harbor, Wash., \$155.

**CONSIGNED BY HAGGARD CO.**

**Females.**

Duke De Kol Veeman, November, 1911, M. F. Swalwell, \$215.

Dungeness Piebe Clothilde De Kol, December, 1914, T. G. Bowen, \$125.

Clara Segis, November, 1910, M. F. Swalwell, \$230.

Uneeda Korndyke Delinda, January, 1906, W. Bishop, \$125.

Uneeda Korndyke Dessa, November, 1911, A. E. Smith, Seattle, \$185.

Uneeda Korndyke Ada, October, 1908, C. E. Lewis, Seattle, \$310.

Uneeda Korndyke Delma, February, 1912, Carnation Farm, \$220.

Dungeness Queen Korndyke Segis, April, 1914, M. F. Swalwell, \$305.

Uneeda Korndyke Dinah, February, 1912, M. F. Swalwell, \$235.

Dungeness Pontiac Polkadot Girl, May, 1915, Carnation Farm, \$145.

**Males.**

King Pontiac Terkstra 2d, March, 1913, C. Hone, Everett, Wash., \$170.

Lord Maple Ridge Beets, December, 1912, L. Wells, Mt. Vernon, Wash., \$100.

Dungeness Polkadot Korndyke Segis, March, 1914, J. B. Lee, Norman, Wash., \$105.

**DAIRY CATTLE AWARDS.**

**At Washington State Fair, North Yakima.**

The show of dairy cattle was of excellent quality throughout. Competition was strongest in the Holsteins.

In several cases where no ribbon was given the score of merit was very nearly up to that of the animal which took the prize.

H. C. Davis, of Granger, was justly proud of the fact a yearling bull of his own choice in breeding was awarded grand championship, attesting good judgment and skill.

**Holsteins.**

Exhibitors: H. C. Davis, Granger, Wash.; Geo. A. Gue, North Yakima, Wash.; Joseph M. Tyson, Moxee City, Wash.; John L. Smith, Spokane; W. W. Butler, Grandview, Wash.; D. C. Bunn, Prosser, Wash.; W. M. Nelson & Son, North Yakima; Wm. Todd & Sons, North Yakima; J. A. Simonson, North Yakima.

**Judge, Prof. Major, California.**

Bull, 3 years old or over, 1st, John Smith; 2d, H. C. Davis; 3d, John Smith.

Bull, 2 years old and under 3, 1st, H. C. Davis. Bull, Sr. yearling, 1st, John Smith; 2d, H. C. Davis; 3d, Jos. M. Tyson.

Bull, Jr. yearling, 1st, H. C. Davis; Bull Sr. calf 1st, H. C. Davis; 2d, Jos. M. Tyson.

3d, John Smith; 4th, H. C. Davis; 5th, Wm Todd & Sons. Bull Jr. calf, 1st, John Smith; 2nd, H. C. Davis; 3d, Jos. M. Tyson; 4th, J. A. Simonson; 5th, W. M. Nelson & Son.

Cows, 4 years old and over, 1st, John Smith; 2d, John Smith; 3d, H. C. Davis.

Cow, 3 years old or over, 1st, H. C. Davis; 2d, John Smith. Heifer, 2 years old or over, 1st, H. C. Davis; 2d, John Smith; 3d, John Smith.

Heifer, Sr. yearling, 1st, H. C. Davis; 2nd, John Smith; 3d, Jos M. Tyson.

Heifer, Jr. yearling, 1st, John Smith; 2d, Wm. Todd & Sons; 3d, D. C. Bunn.

Heifer, Sr. calf, 1st, H. C. Davis; 2d, John Smith; 3d, Wm. Todd & Sons; 4th, Jos. M. Tyson; 5th, W. W. Butler.

Heifer, Jr. calf, 1st, John Smith; 2d, H. C. Davis; 3d, Wm. Todd & Sons; 4th, Wm. Todd & Sons; 5th, H. C. Davis.

Champions.—Sr. champion bull over 2 years, 1st, John Smith. Jr. champion full under 2 years, 1st, H. C. Davis.

Sr. champion cow over 2 years, 1st, John Smith. Jr. champion heifer, under 2 years, 1st, John Smith.

Grand champion bull, pennant, H. C. Davis. Grand champion female, pennant, John Smith.

Aged herd, 1st, H. C. Davis; 2d, John Smith. Young herd, 1st, H. C. Davis; 2d, John Smith; 3d, Jos. M. Tyson.

Calf herd, 1st, H. C. Davis; 2d, John Smith; 3d, Wm. Todd & Sons.

Groups—4 animals, either sex, get of one sire, 1st, H. C. Davis; 2d, 3d, John Smith. Two animals either sex,

# The Reason

# The Result



## LARROWE'S DRIED BEET PULP

is clean, wholesome, appetizing and aids digestion;

will produce more milk at less cost than any other feed.

"—at no time did we ever handle any feed that gave better satisfaction or met with such general favor as Larrowe's Dried Beet Pulp, and we are very glad for having pushed it as hard as we have.

(Signed)

Oregon Commission Co.  
Oregon City, Ore."

## Your Cows Need This rich, succulent feed, in order to do their best

Dealers everywhere are selling it rapidly, because it "delivers the goods." It makes no difference what ration you may be using—you can add Larrowe's Dried Beet Pulp to it and get better results. This has been proven by large and small feeders everywhere. As it costs almost nothing to make the test, we suggest that you go to your feed dealer today and order a 100-lb. sack (either plain or with molasses) and try it on one cow whose milk record you know. The results will surprise you.

### Write For a Copy of Our Booklet—"Profitable Feeding"

containing valuable information on feeds and feeding. Sent free to any address upon request.

## THE LARROWE MILLING CO.

939 Central Building

Los Angeles, Cal.



## Holstein Home Herd

Watch for our offering of cows to be sold at the Cascade International Stock Show. Here is your chance for high grade cows and heifers, bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old.

Write for full records and prices\*on such stock as you desire.

## E. B. MARKS

Route 5, NORTH YAKIMA, Wash.

## DAIRYMEN WANTED

Fine opening for good dairymen who have a few cows or some cash. Good opportunity for the 20-cow unit dairyman on a co-operative basis. For particulars address W. H. Kaufman, Bellingham, Wash.



During the busy season there's hardly time even for greasing the wagons. That's when you're glad you use

## MICA AXLE GREASE

The ground mica makes Mica Axle Grease last so long that you need apply it but half as frequently as you do some other kind. It pays to use Mica Axle Grease. Dealers everywhere.

**Standard Oil Company**  
(California)  
Tacoma



produce of one cow, 1st, H. C. Davis; 2d, John Smith; 3d, Jos. M. Tyson.

#### Ayrshires.

W. J. Domes, McCoy, Ore., won all awards.

#### Jerseys.

Exhibitors: Burt Pease, Ellensdale, Wash.; H. West, Scappoose, Ore.; A. H. Huebner, North Yakima; G. C. Chapman, Pomona, Wash.; E. O. Erickson, North Yakima; I. B. Richards, Tacoma.

Bull, 3 year old or over, 1st, Pease; 2d, Richards. Bull, 2 years and under 3, 1st, West; 2d, Pease; 3d, Huebner. Bull, Jr. yearling, 1st, West; 2d, Chapman; 3d, Pease. Bull, Sr. calf, 1st, Erickson; 2d and 3d, West; 4th, Pease. Bull, Jr. calf, 1st, West; 2d, Pease; 3d, Chapman. Cow, 4 years old or over, 1st and 2d, West; 3d, Chapman. Cow, 3 years old or over, 1st, Huebner; 2d, Pease; 3d, Chapman. Heifer, 2 year old and under 3, 1st, Pease; 2d, West; 3d, Huebner. Heifer, Sr. yearling, 1st and 2d, West; 3d, Erickson. Heifer, Jr. yearling, 1st, Huebner; 2d, West; 3d, Chapman. Heifer, Sr. calf, 1st, West; 2d, Huebner; 3d, West; 4th, Pease; 5th, Chapman. Heifer, Jr. calf, 1st, Huebner; 2d, West; 3d, West; 4th, 5th, Chapman. Sr. champion bull over 2 year, 1st, West. Jr. champion bull under 2 year, 1st, West. Sr. champion cow over 2 year, 1st, West. Jr. champion heifer under 2 years, 1st, Huebner. G. Champion male female, 1st, West. Herds: Aged herd, 1st, West; 2d, Huebner; 3d, Pease. Young herd, 1st, West; 2d, Huebner; 3d, West. Calf herd, 1st, Huebner; 2d and 3d, West. Groups: Four animals, either sex, get of one sire, 1st and 2d, West; 3d, Chapman. Two animals, either sex, produce of one cow, 1st and 2d, West; 3d, Huebner.

#### Guernseys.

Exhibitors: Albion L. Gile, Chinook, Wash.; D. H. Looney, Jefferson, Ore. Bull, 3 year old or over, 1st, Looney; 2d, Gile. Bull, Sr. yearling, 1st, Looney. Bull, Sr. calf, 1st, Gile; 2d, 3d, Looney; 4th, Gile. Bull, Jr. calf, 1st, Looney; 2d and 3d, Gile; 4th, Looney. Cow, 4 year old or over, 1st, Looney; 2d, Gile. Cow, 3 year old or over, 1st, Gile; 2d, Looney. Heifer, 2 year old and under 3, 1st and 2d, Looney; 3d, Gile. Heifer, Sr. yearling, 1st, Looney; 2d, Gile; 3d, Looney. Heifer, Jr. yearling, 1st, Looney; 2d and 3d, Gile. Heifer, Sr. calf, 1st and 2d, Gile; 3d and 4th, Looney. Heifer, Jr. calf, 1st, Gile; 2d, Looney; 3d, Gile. Champions: Sr. champion bull, over 2 year, 1st, Looney. Jr. champion bull under 2 years, 1st, Gile. Sr. Champion cow, 2 years, 1st, Gile. Jr. champion heifer under 2 years, 1st, Looney. Grand champion bull, 1st, Looney. Aged herd, 1st, Looney; 2d, Gile. Young herd, 1st, Gile; 2d and 3d, Looney. Calf herd, 1st, Gile; 2d, Looney; 3d, Gile. Groups. —4 animals, either sex, get of one sire, 1st, Looney; 2d, Gile; 3d, Looney. Two animals, either sex, produce of one cow, 1st, Looney; 2d, Gile; 3d, Looney.

#### CASCADE MARIE A WINNER.

Bishop's Cow First at Oregon State Fair in Milking Contest and in Three-year-old Class

The cow Cascade Marie, purchased by Mr. Wm. Bishop, at the Washington State Fair last year at a long price, from Wm. Todd & Son won first honors over all breeds, 14 cows competing, in the milking contest at the Oregon State Fair this year, and she was first prize cow in her class. This confirms the good judgment of Mr. Bishop in the selection of dairy stock of the highest producing merits at the same time adhering to the ideal standard in dairy type. Her 48 hour milk record was 143.5 lbs., fat 4.21, total value \$2.30.

She was an easy winner, the 2nd in rank being a Jersey, St. Maw's Beauty, owned by Ed. Cary, with a total value for the 48 hours of \$1.95.

In this contest were 8 Jerseys, 4 Holsteins and 2 Guernseys. The cow

Bonnie Echo entered by J. L. Smith was highest in the production of butter fat.

## STOCK

### FAT STOCK AT WASHINGTON FAIR.

In the storthorn class, the exhibitors were A. D. Dunn, Wapato, Wash., Dunn & Turner, Wapato, and A. Chalmers, Forest Grove, Oregon. This class was in prime show condition, and the honors well distributed.

The Hereford exhibitors were Geo. Chandler, Baker, Ore., Henry Theisson, Sweetwater, Idaho, and State College, Pullman. Prizes awarded by W. A. Linlater, Puyallup. Geo. Chandler carried off leading prizes, but the Thiessen Herd scored high, and on young stock took the lead.

On Galloways the College was only exhibitor and took the prizes.

### SHEEP AT WASHINGTON FAIR.

The sheep showed up well in numbers and quality.

Shropshires were shown by Washington State College, Pullman, Wash.; Francis Kizer, Harrisburg, Ore.; Knolin & Finch, Soda Springs, Ida.

Knolin & Finch took most of the prizes. Hampshires were exhibited by Ed. School, Albany, Ore., and G. S. Hubbard, Monroe, Ore. Most of the honors went to Hubbard.

South Downs were shown by Hubbard only. Oxford Downs were shown by C. P. Kizer, Harrisburg, Oregon, only.

Cotswolds were shown by Dick Kizer, Corvallis, Oregon, and Wm. Riddell & Sons, Monmouth, Oregon.

Angora goats were exhibited by Wm. Riddell & Sons, Harland, and R. Fairbanks, North Yakima.

Both sheep and goats were in strong demand and the exhibit generally was excellent in quality.

### DEMAND FOR PURE BREDS INCREASING.

During the past month there has been more inquiry among our readers for young pure bred bulls of the dairy breeds, than ever before at this time of the year. This is a natural result of continued urging in our columns, for a higher producing class of dairy cattle. Many of our readers realize they cannot afford to continue keeping cows without some definite margin of profit and that the natural practical process is by way of young pure bred sires whose breeding shows some definite degree of merit. The inquiries the last few weeks have been very strong for Guernseys, though the demand for Holsteins continue to be strong. It is evident that the creameries will be given more substantial support in the way of rich yellow cream of high quality by another two years.

Buying young pure bred bulls of any of the dairy breeds is only one of the many ways of conforming to the successful rural system now in working order in the Pacific Northwest in the interest of each of the many individual farmers.

### SHEEP AT STOCK SHOW.

Sheep from the big sheep ranges of the Pacific Northwest, and sheep from the grain farms and orchards will be on exhibit at the coming Cascade International Stock Show at North Yakima, November, 22-27. Leading

# Bull For Sale

Greenbank's Gerster Ayacanora, born Aug. 27, 1914. His dam has just finished a yearly record of 15,141 pounds of milk and 646 pounds of butter. His pedigree includes a number of the best proven producers of the Holstein family.

PRICE ONLY \$150.00

Terms will be given if desired. Write us for copy of pedigree and further particular.

## Greenbank Farm

GREENBANK, WASH.

BREEDERS OF HEAVY-PRODUCING HOLSTEINS

## A. J. C. C. JERSEYS

Big Producers

Fine heifers and young bulls of the highest breeding for sale. Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

## HAMPSHIRE HOGS Stone Duke's Strain

Fifty head sold at public sale averaged \$108.49 each. Head sire son of Jenny Taylor. Choice stock offered of all ages and in trios unrelated. Write for our further records and prices.

H. D. DE KALB

De Kalb, Iowa

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

## Red Polled Cattle For Sale

A few choice young registered bulls and heifers. Best breeding. Write for prices.

MRS. D. F. ALWARD,  
Orting, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1

Lynden, Wash.

## Ridgeview Duroc Jerserys

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

EDWIN PETTETT Dungeness, Wash.

SEPARATORS, ENGINES, SPREADERS  
200,000 customers testify that my designers and factories build quality into them. Built for long, hard, continuous users' satisfaction. **HIGHEST QUALITY—LOWEST PRICES.** About 1-3 to 1-2 less than you usually pay. Don't buy till you get my catalog of these and other farm and household goods free. A postal gets it. Low freight rates. Wm. Galloway Co., Box 8, Waterloo, Ia.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

A. BENSON  
Lynden, Wash.

## FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle.

## CHOICE HIGH-GRADE GUERNEYS

cows, Wisconsin bred; most of them fresh this fall; 25 head yearling and 2-year-old grade Guernsey and Jersey heifers; will not sell individuals from either lot. Several pure bred Guernsey bull calves.

C. G. HENKEL,  
Opportunity, Wash.



prominence among the most liberal premiums of the Show are given to sheep. To give impetus to sheep raising in the Pacific Northwest, particularly as a supplementary industry to fruit and grain farming, is one of the big purposes of the show. The breeds now listed for entry include the Romney, Rambouillet, Hampshire, Oxford, Shropshire, Lincoln, South-down and Cotswold. The prizes aggregate \$1,680.

Among the sheep exhibitors for the Show the only extensive woman sheep owner in the state is Mrs. Etta Vessey, of North Yakima, whose holdings in this branch of the livestock industry have lately been greatly increased. Lincolns and Romneys will be entered by H. Stanley Coffin, of North Yakima, who has marketed nearly two thousand bucks from the Yakima Valley this year. Hampshires will have a strong supporter in Tom Smith, of North Yakima. J. B. Cornett, of Shedd, Oregon, has a strong line of Cotswolds. Southdowns have a strong supporter in Frank Brown, of Carleton, Oregon. Other well known sheep men who have membership in the Show Association and may try for honors in the show ring are Geo. Prior & Son, of North Yakima; Malcom McLennon, S. A. Anderson, Peter Agor, D. Goodman, Fred L. Farmer, E. B. Marks, The Yakima Sheep Company, A. D. Dunn, McGee & McGuffy, James McQueen, Henry Clerf, and John Hanks. Lozier Brothers, of Ephrata, Washington, are somewhat interested in sheep as a joint industry with cereal farming. Montana's representation is by the County Sheep Association, of Boleman. Nolan & Finch, of Silver Spring, Idaho, are looked to for strong entries.

S. B. NELSON, Sec.

The article on Ginseng Culture was omitted from the September issue for want of space.

## HOG TALKS

By W. H. Kaufman, Bellingham, Wn.  
Cost of Producing Pork.

Washington hogs, usually grass or sloop-fed, dress away about one-third. Here in Whatcom county we sell few live hogs; so that the price of live hogs must be arrived at by taking two-thirds of the price of dressed pork.

We have too much pork for home use, and too little to ship out, so our prices are probably lower than in most other places, being 8 cents at present. Inspected pork (that is, pork killed in a slaughter house) sells for about a cent a pound above that killed by farmers; but as it would cost considerable to get a car load of live hogs together, very few carloads are shipped.

Taking 8 cents as the selling price; two-thirds of 8 are 5½ cents, the present price of live pork.

But if anyone thinks the farmer gets 5½ cents for the pork he produces—why, that person has several guesses still coming!

### Pigs Cost a Cent a Pound.

A U. S. Census Bulletin states that farmers get on an average \$1.06 a day for their labor, after allowing 5 per cent for the money they have invested in their farms!

One reason why they get so little is that they neglect many items of cost, thus thinking they can produce much more cheaply than they really do.

A pig is worth \$1.25 to \$1.50 the day it is farrowed; costs that much and must be so counted.

It costs the average farmer not far from \$1.50 a month (5 cents a day) to keep a sow during the four months she is carrying her litter and the two months she is suckling her pigs. This makes \$18 a year. Some sows will raise 20 pigs a year, others not do nearly so well. Many unforeseen accidents will happen. It is a good sow that raises, year after year, 12 to 14 pigs. Hence a pig, the day it is farrowed, is worth (costs) \$1.25 to \$1.50. This is ONE CENT A POUND

## OFF THE PRICE OF THE BLOCK HOG!

So when we get 5½ cents per pound, we are really getting only 4½ cents per pound, for one cent must be deducted for the pig, "overhead expense," or "raw material." the manufacturer would call it.

### Labor Charge.

Many farmers make no separate charge for labor. Manifestly this is an error. "Time is money" on the farm as well as anywhere else. No farmer would take care of 190 hogs just for fun.

One dollar and a quarter for each hog is a low charge for labor—ANOTHER CENT A POUND OFF THE PRICE OF THE BLOCK HOG.

### Risk

To be sure we do not have much hog sickness here in the Sound country. But we may have the cholera any day; with quarantine; loss; fumigation of cars and all the bother and expense they now have in the East. Any farmer with \$1,000 to \$5,000 worth of hogs nearly ready for the market would give considerable for complete insurance. Personally, I would give 5%; and 5% on an average block hog is another half a cent a pound.

Here then we have three items often overlooked, amounting to 2½ cents per pound on dressed pork. So that in figuring the cost of pork production we must subtract 1½ cents from the price of live pork (or 2½ cents from the price of dressed pork):

Pork at 8 cents dressed, less 2½ cents will mean only 5½ cents, and live pork at 5½ cents, less 1½ cents, will mean only 3½ cents.

### It Can't Be Done With Grain.

It is a good average shote that makes a pound of pork out of 4 pounds of grain; hence grain must be not more than something like a cent a pound.

In Iowa they think there is little profit in feeding 50 cent corn (\$16.66 a ton ON THE FARM). To buy grain in town; haul it out and feed at a profit we must get it for \$15.00 a ton.

There is no grain to be had at that price; hence grain fed pork is produced at a loss.

### Grain and Pasture.

A three per cent grain ration (three pounds of grain to each 100 pounds of shotes) is better than an all grain ration; but on cleared land that will rent for \$10 to \$20 cash there is no money in hogs.

### Pork From Waste.

Pork may be produced at a profit only from waste; from unsaleable produce I sell from \$1,000 to \$2,000 worth of pork each year, at a nice profit. Having shown how to produce pork at a loss, I will in the next paper show how to produce it at a profit.

## SWINE AT WASHINGTON STATE FAIR.

The swine exhibit was larger and better than usual, although exhibitors complained of rather slow sales. High class breeding hogs can now be obtained at low cost, and there is likely to be a rising market in the near future. Among exhibitors were, in Berkshires, Nels B. Jorgensen, Mabton, Wash., D. C., Bunn, Prosser, Wash., Wadsworth Bros., Tieton, Wash., Chester L. Miller, North Yakima, Wash., Clark Bros., Prosser, Wash., and Thos. Carmichael, Chewelah.

In Chester Whites—Ed. School, Albany, Oregon., H. L. Fisher, McMinville, Oregon. Duroc Jerseys, Nelson & Cornell, North Yakima, Robert Nelson, North Yakima, Ruby H. Holles, North Yakima, S. D. Cornell, North Yakima, and Lawrence Main Parker, Wash. Robert Nelson, a boy of 18, won the leading honors in this breed against very strong competition, and his exhibit was well worth all the prizes taken. In Hampshires J. M. Frutts, Enterprise, Oregon, was

## ALBERS MOLASSES FEEDS

**MR. DAIRYMAN**—What are you going to feed your milk cows this fall and winter? Do not feed all Protein or all Fat. Note the analysis of ALBERS MOLASSES FEED—an excellent balanced ration for milk cows.

|                  | Protein | Fat  | Carboh | Fibre |
|------------------|---------|------|--------|-------|
| Guaranteed ..... | 10.     | 3.25 | 51.    | 16.   |
| Actual .....     | 11.82   | 4.01 | 52.03  | 14.03 |

**SOYA BEAN MEAL**—This is the cheapest digestible Protein you can buy which can be fed with absolute safety.

**GROUND BARLEY AND OAT FEED**—The feeding value of the combination of these two grains is well known to the practical dairyman. There is something in them that makes milk.

**CANE MOLASSES**—The molasses we use in the manufacture of our feeds is pure Cane or Blackstrap molasses. It is extremely palatable, aids digestion, and will keep your cows in a good healthy condition.

**ALBERS MOLASSES FEED** is a combination of the above and is a milk maker. It is a better feed than Shorts and can be bought for less money.

Ask your dealer.

The price is right.

## Albers Bros. Milling Co.

SEATTLE TACOMA LOS ANGELES PORTLAND SAN FRANCISCO

### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

the only exhibitor, but his hogs would have won over very strong competitors.

Tanworths—This breed was represented by J. B. Mackoy, Farragut, Iowa, Preston Roy, Prosser, and Webster Robert & Smyser. Mackay won the leading honors for this coarse breed.

## DRIED BEET PULP, ITS MANUFACTURE AND VALUE.

Dried beet pulp has come into popular favor within the last ten years, attracted a great deal of interest and used in a wide extent of territory. It is sold in California, Oregon, Washington; in New Mexico, Texas, Colorado, Kansas, Iowa, Missouri; in Alabama, Georgia, Kentucky, Tennessee, Florida and every other state east of the Mississippi right up to the furthest end of Maine. In spite of all the varying condition, climatic and otherwise, dried beet pulp has proved itself a valuable adjunct to the ration of dairy cows and other farm live stock in all this wide territory.

There are several reasons why dried beet pulp is such an admirable feed, and why it fulfills so many functions in the ration:

(a) It is very light and bulky, one quart weighing approximately half a pound. When moistened, either by water before feeding, or with the liquids in the animals stomach, dried beet pulp swells to five or six times its original bulk. This is why it can be used so successfully in place of corn silage, hay or other roughness, for bulky feed.

(b) As a grain feed it is valuable because of its high digestibility and the great amount of nutrition contained. While its analysis shows that it contain nearly 20 per cent. of crude fibre, it is interesting to know that this crude fibre is 48 per cent. digestible, whereas the fibre of wheat bran, which is on the average 9 per cent. of the total, is only 39 per cent. digestible, so that there is actually twice as much indigestible fibre in wheat bran as there is in dried beet pulp; a fact which is probably ignored by most people who compare the two feeds. In dried beet pulp the nitrogen free extract is 91 per cent.

## "B. K. M. BERKSHIRES"

Bred Gilt, Sows and Boars for sale

Good pigs \$10.00 to \$15.00 each.

WOODLAND FARM

Lacey, Thurston Co., Washington



### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

ALBERT C. HERRE

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## JERSEY CATTLE-DUROC HOGS

Spring pigs, April farrow, for sale. Boars \$12. Sows \$15. Registered.

DAVID C. DILWORTH,  
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## Registered Duroc Jersey Hogs

Thrifty, prolific strain. Bred sows for autumn and winter delivery.

J. Hanks & Sons Ellensburg, Wash.

For Sale  
**Duroc Hogs**

Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.

H. A. SIMONDS  
Bothell, Wash.

## Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,  
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## IMPORTED AND HOME-BRED ENGLISH SHIRES AND PERCHERONS ALSO O. I. C. SWINE

Stock of All Kinds  
Guaranteed Satisfactory  
And Prices in Reach of All

A. L. Pierce Granger, Wash.

## GOATS

Westfold Farm thoroughbred registered Angoras. Choice stock at low prices. Also high grade Toggenburg milch goats from noted thoroughbred buck "Planchon" A. M. G. R. 497. Address

DAVID WHITCOMB,

Arcade Building, Seattle



digestible.

(c) Dried beet pulp is not only itself very digestible, but it also aids in the digestion of other feeds used with it. It is said feeders that when they use dried beet pulp they do not notice undigested food in the voidings of their cattle, and they attribute this fact to the lightness and bulk of the pulp, which so separates all the particles of all the feeds used with it, that the gastric juices are permitted to circulate through the entire mass.

#### How Dried Beet Pulp is Made.

It is a by-product of some twenty or more sugar factories in the United States which are in the business of extracting sugar from the sugar beet. After the beets are topped and cleaned, they are run through slicers which cut them up into small pieces about one and a half or two inches long, and somewhat thinner than a lead pencil. These slices are placed in cells and the sugar soaked out with warm water. The exhausted slices, which contain all of the original vegetable matter of the beet, are then immediately conveyed to the drying room where, after being run through presses to remove the surplus water, they are put into dryers and in less than an hour are thoroughly dried. The original slices shrink to a very small proportion of their former size, and now resemble light colored tea leaves. In this condition the pulp is as dry as the driest hay, and can be stored and kept indefinitely. A small sample soaked in water for a few hours will swell until you see practically the original beet slices, just as they came out of the diffusion batteries of the sugar factories. People who see a sample of dried beet pulp for the first time wonder (and quite naturally) how it can be termed a succulent food. The succulence comes from its wonderful power of absorbing water.

#### The Sugar Content.

It is not unusual to hear people say they can't see how dried beet pulp can be worth anything when all the sugar has been taken out of the beet; and when they get a sample, they say, "It has no taste," or, "There doesn't seem to be any nutriment in it." That these are merely thoughtless expressions can easily be seen when you consider that sugar is not ordinarily used as part of a dairy cow's ration. Sugar is a pure carbohydrate, and it is of no more value in the food than any other carbohydrate. You give your cow bran and cottonseed meal, and cornmeal, and clover hay, and don't for a moment criticize any lack of sugar in these feeds; then why demand sugar in dried beet pulp? As a matter of fact there is sugar in the pulp, even though the sugar factories have endeavored to take all they could from the beet. One hundred pounds of dried beet pulp is the vegetable residue from about one ton of beets, and in that one hundred pounds of dried beet pulp there is approximately three pounds of sugar; so out of the original ton of beets in which there was contained from three hundred to three hundred and fifty pounds of sugar, the company has taken out all the sugar except about three pounds; nevertheless when the pulp is concentrated by drying, the three per cent. to four per cent. sugar left in it becomes an appreciable quality.

#### Analysis, Protein and Carbohydrate.

The low protein content of dried

beet pulp (guaranteed crude protein 8 per cent., but usually running 9 per cent. by analysis) is also a feature which causes hesitation on the part of many prospective purchasers, who fail to realize that while protein is a very valuable and, in fact, indispensable part of the ration, it is not the only thing to be considered. Dried beet pulp is a carbohydrate feed; it is not sold to supply the protein of the ration, and therefore to get results from its use, some rich protein product should be fed in connection with it. The average cow requires only from two to two and one-half pounds of digestible protein daily, as against fourteen pounds of digestible carbohydrates. Therefore, as it is necessary to furnish so much more carbohydrates than protein, it would seem desirable to pay just as close attention to the economical selection of feeds that supply the carbohydrates as those which provide the protein. Don't judge your protein feeds from the standpoint of how much carbohydrates they contain, and on the other hand, don't judge your carbohydrates feed from the standpoint of how much protein they contain.

#### Dried Beet Pulp Versus Bran.

In the Pacific coast states, where alfalfa is raised cheaply and to perfection, wheat bran is no longer a necessity, nor even an economical feed for the average dairyman. If he wants protein, he will not buy bran, which contains only 11 per cent. digestible protein, when he can get for less money cottonseed meal containing 37 per cent. protein; or alfalfa which he can raise himself or buy for less than half the cost of bran. On the other hand, if he wants a carbohydrate feed, why should he buy bran, which contains only 48% of digestible carbohydrates, when he can get dried beet pulp (which usually sells for less) with 66% carbohydrates? A combination of alfalfa and dried beet pulp is so far superior to wheat bran that there is no comparison between them. Based on the digestible nutrients contained in all the feeds, three pounds of dried beet pulp and one pound cottonseed meal is about equivalent to five pounds of wheat bran. Bran was formerly valued as a bulky feed, to lighten up the ration, especially where corn was used, but dried beet pulp is so much better as a bulky feed, and in addition contains an abundance of succulence, that the special claims for wheat bran on this score can no longer be maintained.

#### CIDER KEPT SWEET.

To keep any kind of fruit juice sweet, it is necessary to sterilize it in a thorough manner, then store in a dark, cool place.

Fresh cider ferments very quickly therefore it should be heated soon after being made to 170 degrees F., kept at that temperature for 10 minutes, then bottle in thoroughly sterilized bottles. The corks must also be sterilized, or boiled for a few minutes. Prof. R. W. Thatcher suggests that the bottles should be kept in a tank or kettle of boiling water until needed, filled quickly, and immediately corked with good air-tight corks. The corks may be sealed in with paraffin, but should not be wired or tied in. There will be no pressure from the inside the bottle if the sterilization is thorough and the bottles air tight. If fermentation should begin it is better to have the corks blow out than to have the bottles burst.

Preservatives should not be used. They are unnecessary and unless very

## JERSEY HEIFERS FOR SALE

Have a few registered Jersey heifers and heifer calves as well as young Register of Merit cows to offer at prices far below their value. All high class, prize winning, producing stock.

SILVER BIRCH FARM

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## White Leghorn Hens

With guaranteed trap nest records of over

200 EGGS PER YEAR

at \$25 per dozen.

Can mate an unrelated male of very high record pedigree if desired. Prices on single fowls or larger lots on application.

## The Shoup Hennerly

ROUTE 2, LYNDEN, WASH.

### Vetch and Clover Seeds

That are tested by the famous O. A. C. germination and purity test. Vetch \$3.75 in lots less than 500 lbs. double sacked to prevent loss by leakage. Red Clover 18 cents, Alsike 16 cents. Also Winter rye, barley, wheat, and oats. Can supply grass seeds of all kinds f. o. b. Corvallis Flouring Mills, Corvallis, Ore.

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. **C. C. BUCKINGHAM, Houston, Texas.**

## Codfish

### OR ALASKA BLACK COD

Delivered to your door by parcel post, or by express, 10-pound kit for \$1.20 prepaid. One salmon, 7 to 9 pounds, delivered for same price. Quality guaranteed.

**WASHINGTON FISH & OYSTER CO.,**

Seattle, Wash.

## Lewis County Farms

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

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401 Equitable Bldg, Tacoma, Wn.



Caught 51 Rats in One Week

Trap resets itself; 22 inches high; will last for years; can't get out of order; weighs 7 pounds; 12 rats caught one day. Cheese is used, doing away with poisons. The trap does its work and never fails and is always ready for the next rat. When rats and mice pass the device they die. Rats are disease carriers, also cause FIRES. Rat catcher sent prepaid on receipt of \$3. Mouse catcher, 10 inches high, \$1. Money back if not satisfied.

**H. D. SWARTS,**

Inventor and Manufacturer of Universal Rat and Mouse Traps, Box 566, Scranton, Pennsylvania.

carefully used may be injurious to health.

Boiled cider, that is, cider which has been "boiled down" until it is fairly thick, is easy to keep and a very useful addition to the family cupboard.

## Twenty-Second Annual Show Tacoma Poultry Association

Entries close December 20, 1915, and birds must be in the show room December 27, at 8 p. m.

Premiums on all varieties doubled where there are more than one hundred fowls entered.

Premium list and entry blanks sent for the asking. Don't wait but write at once.

Be sure and enter some of your fowls if only a trio. Help to boom your breed by making a large entry. Come and spend the week in the show room.

Banquet Friday evening.

Fred A. Johnson, President, Tacoma.

W. M. Coats, Judge.

William Shepherd, Secretary, Snmner, Wash.

## PULLETS WANTED

Those who have good pullets of any of the standard breeds to sell in quantity lots of 25 up to several hundred will please write particulars.

**J. L. CRAIB,**  
1022 Western Ave.,  
Seattle, Wash.

## -TANCRED-

THE TRAP NESTED WHITE LEGHORNS

TRAP NESTED CONTINUOUSLY SINCE JULY, 1905

**BREEDING STOCK**

HENS--PULLETS--COCKERELS

Sent for Price List

THE TANCRED FARMS - - - KENT, WASH.

## Rocks BARRED WHITE, PARTRIDGE and BUFF

Choice cockerels at \$5 each, prize winning stock, good layers. Eggs \$2.50 for setting. Special prices on lots.

**MRS. D. F. ALWARD**  
Orting, Wash.

For Sale—Fine Turkey Gobblers and Emden Geese.

**MISS E. M. KELOGG**

R. F. D. No. 3

Tacoma





Messrs. R. M. Wade & Company,  
Portland, Oregon,  
Gentlemen:-

Pomeroy, Washington,  
October 16, 1914.

Last year I was using a (name furnished on request) grain drill to seed my ground and while working along the right-of-way the team became frightened and ran across the tracks, breaking up the drill badly. I set the broken drill aside and purchased a New Peoria Disc Shoe Drill from your Pomeroy, Wash., agent, Mr. J. R. Stevenson, taking it out and starting to work again where I left off with the other drill. I wish to say that I was perfectly astonished at the results. When the grain was grown, the point where I had begun with the Peoria could be easily marked with the eye. The grain sowed by the Peoria was about four inches higher and at least fifteen to twenty per-cent thicker. To say that I was highly pleased with the results is stating it mildly.

Very truly yours,

*McKinnis*

## You can increase YOUR yield with a Peoria Disc Shoe Drill

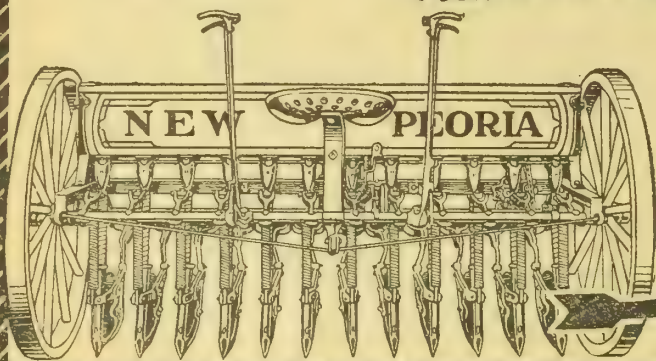
This letter tells the story better than it could possibly be told by us! The accident which resulted in Mr. Rummens buying a Peoria Drill, convinced him in a wonderful way, of the Peoria's absolute superiority! You don't feed the birds with a Peoria Disc Shoe Drill. Every kernel is deposited in the bottom of the furrow—on that packed seed bed—and

covered, deep or shallow, just as you desire. Put your crops in this fall with a Peoria—you'll make the price of a new drill many times over in the increased yield. It takes no more labor and less seed than the ordinary way—but the difference seems like magic! THE DISC SHOE IS WHAT DOES THE WORK.

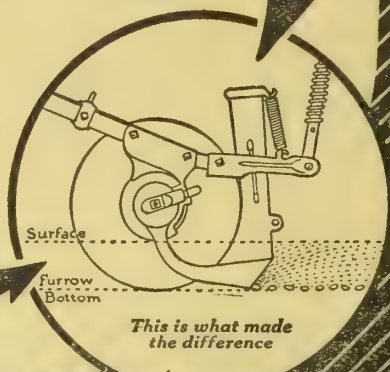
Wholesale Distributors  
for Peoria Drills  
in the Northwest

**R.M. WADE & CO.**  
SINCE 1865  
PORTLAND, ORE.

334 Hawthorne Avenue,  
Occupying an Entire  
City Block



"Wade  
Quality"  
has meant  
the best  
implements  
for over  
half a  
century



Actual Photograph

**MAKES  
LAND CLEARING  
EASY**

**"K" HAND-  
POWER  
STUMP  
PULLER**

You can pull the biggest stumps, like rowing a boat, with the marvelous "K" Hand-Power Stump Puller. One man at the handle can pull 96,000 lbs., or 48 tons. Think of it! This is more power than 16 horses, or a 9x10 "Donkey" engine can develop on a straight line pull. With the "K," land clearing becomes an easy, one-man, spare-time job.

No Horses—No Digging—No Expensive Blasting is Necessary.

**CLEAR YOUR STUMP LAND  
AND DOUBLE ITS VALUE!**

ADOPTED AND USED BY U.S. GOV'T., whose officials say: "It's a Wonder." Also used by many States and Counties. I have pulled 3,000 immense stumps with it, without help! It will pull any stump that a 1-inch cable will hold. Made of Krupp steel. Built to last a life-time. Absolutely guaranteed. Works on any kind of land, dry or wet, hard or soft, hilly or level. Weighs only 171 lbs. Easily moved and handled by one man. Send for my special money-saving offer, valuable free book on land clearing, and actual guaranteed photographs of the "K" in operation. Write today.

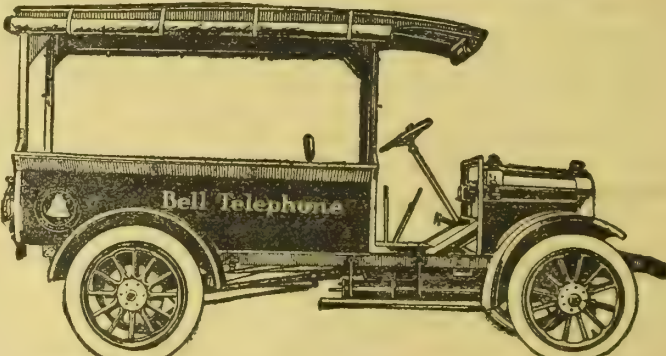
WALTER J. FITZPATRICK, Box J

182 5th Street, San Francisco, Calif.

## FARMERS AND DAIRYMEN

We want you to investigate the famous VIM TRUCK ½ to 1 ton. This wonderful car is operated and maintained at an astonishingly low cost and will save you money.

The U. S. Government has adopted the Vim for



postal service after exhaustive tests. The Bell Telephone Co. has over 30 in daily use. For farm and dairy work it is the only practical car. Twenty H. P. long stroke motor, 35 H. P. gears, oversize tires, Stromberg carburetor, high tension magneto, 12-inch brakes; seven different types of bodies. \$775 to \$895 delivered. Write for other details.

## STANDARD MOTOR CAR CO.

W. L. KIRBY, Mgr.  
744 Commerce St., Tacoma, Wash.

W. R. SHOEMAKE, Sec.-Treas.

## Fall Seeding Affords Satisfaction

Send your proposed seed order for any kind of grass seed of the highest standard purity and germinating quality for fall sowing. Prompt shipment and satisfaction guaranteed.

Gasoline Engines for every farm purpose.

## Poole's Seed and Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

## CATALOG AND GUIDE BOOK ON ORNAMENTAL PLANTING FREE

Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,  
J. B. PILKINGTON, Nurseryman  
Portland, Ore.

## PLANT Walnut Trees

ORNAMENTAL and SHADE  
TREES and FLOWERING  
SHRUBS.

Thus you can enhance the value of your place by a little attention to nut growing and ornamental planting. This may be brought about at a surprisingly small cost in proportion to the actual value afforded. Here are some of the select varieties—

### IN WALNUTS:

Franquette, Mayette, Chaberte, Cordiformis and Sieboldi.

### IN ORNAMENTALS:

Hydrangeas, Lilacs, Snowballs, Syringas, Deutzias, Mountain Ash, Spireas, Labernums, the great variety of roses and small evergreens.

We have as fine an assortment of the staple deciduous shade trees, shrubs, vines, roses, etc., as can be found in any nursery in the West. A line will bring catalog and information. Our salesmen cover almost every field.

Let us hear from you.

Good stock. Prompt service.

## Washington Nursery Company

Toppenish, Washington

### GOOD REGISTERED BERKSHIRES —

Choice pigs, \$10 each at weaning time.  
W. D. GOOD, Mt. Vernon, Wash.



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., NOVEMBER, 1915

No. 11

## THE COST OF FEED.

The cost of feed is the ever-present problem with dairymen, and particularly is the grind hard where the cows are not good producers of milk and butter fat. In the Pacific Northwest land is expensive, both in the irrigated districts and in the logged-off sections. All things considered, there is in fact very little difference between the cost of an irrigated and a logged-off tract of equal size. But the redeeming feature is the natural adaptation of the crops rich in protein, including alfalfa, clovers, vetches, peas, etc., and these can be grown from year to year without impoverishing the soil.

While these are leading crops, it behooves the dairy farmers to figure on growing some one or more of the grains, for crops rich in protein alone do not afford a balanced ration, and feed which does not contain the proportionate elements necessary for good milk production is neither economical nor best for the dairy cows.

The margin of profit derived by the dairy farmer will largely be determined by the cost of his balanced ration. This fact is emphasized by W. A. Henry, University of Wisconsin, who is a leading authority on live stock problems.

"In securing a ration, which provides the nutrients called for by the standards and meets the other conditions, lies a great opportunity for exercising foresight and business judgment on every farm where animals are fed. The wise farmer-feeder will consider the nutrient requirements of his animals in planning his crop rotations. Through the use of grain from corn or the sorghums, legume hay and such cheap succulence as silage from corn or the sor-

ghums, it is possible in most sections of the country to go far toward solving the problem of providing a well-balanced, economical ration.

"The feeds selected for any animal should be such that they will not injure its health or the quality of the product yielded. Feeds which are suited to the one class of farm animals may not be adapted to others. Again, a given feed may give satisfactory results when combined with certain other feeds, yet in other combinations it may prove unsatisfactory. A few examples of such conditions are furnished in the following: Cottonseed meal in moderate amounts is an excellent feed for cattle, sheep and horses, yet it is so frequently poisonous to pigs that feeding the meal, as at present prepared, to these animals cannot be advised. While there is always danger from using feeds damaged by mold, such material may often be eaten by cattle when it would poison horses or sheep. Timothy hay, which is the standard roughage for

the horse, is unsatisfactory for the dairy cow, and may cause serious trouble with sheep on account of its constipating effects.

"Feeding cows a heavy allowance of ground soybeans produces unduly soft butter, while an excess of coconut meal makes the butter too hard. Peanuts and soybeans produce soft lard when forming too large a part of the ration of fattening pigs."

In the Pacific Northwest alfalfa hay and pasture of mixed grasses, available nearly all the year through, form the basis of feed for nearly all kinds of stock. During the past few years corn growing for silage has become practicable, and this is now fed in connection with the alfalfa hay and pasture, together with very little other concentrates.

In 1916 thousands of silos will be built on the farms in the Northwest. In the Coast section some of the farmers are figuring on using them for the clover, vetch and other grass crops alone. But these legumes, unmixed with some grain crop do not make good ensilage. When growing vetch for silage, it should be well mixed with either oats, wheat or barley. A leading dairyman is figuring on growing a crop of corn and on another piece of ground vetch and oats, so timed that the two can be cut at the same dates and mixed while being run through the feed cutter for silage. This of course would apply to the late crop. The vetch, clover or pea crops cut about June 1st should have a good mixture of one of the cereal grains, or even timothy hay when siloed. It is a good time now to figure ahead for next year's crop, keeping in mind a balanced ration for the kind of stock reared, volume of crop for the particular kind of soil to be cropped, and its total cost of production. In this connection the Coast section farmers will bear in mind that the leguminous crops are increased from liberal applications of lime, obtained most cheaply in the ground limestone

form. The larger the crops of any of these legumes the more is the ground enriched in nitrogen and thus is the soil built up from year to year instead of being impoverished. Successful dairy farmers are all figuring carefully to keep the feed cost low, for then they can better afford to keep the good producers constantly chewing, and thus realize some fair measure of profit.

## GUIDING THE FINANCIAL GIANT.

John Shelton Williams, controller of the currency, Washington, D. C., has taken occasion to make public the policy of the government on the question of finance and banking affairs, in his address before the Kentucky Bankers' Association. "A Giant Needing Guidance" was his theme. It seems that in the Southern states that bankers and financiers, have in too many cases, charged too high a rate of interest, the burden falling heavily upon those with limited means and earning capacity and particularly detrimental to the farming industry. Mr. Williams gave the bankers to understand that abuses of this kind would be cause for the government to withhold support through the regional banks. Since the farmers as a rule are good credit risks, it behooves the bankers to help devise some way to finance their operations whether for an entire cropping period of the year or through a series of years while a stock industry is being developed. In a new country where many experiments must necessarily be made the rural financial problem is more difficult. But wherever the system of farm operation that is in practice is safe the farmer, according to the opinion expressed by Mr. Williams, should pay no more for borrowed money than does the merchant or other business man, and that without reference to the amount involved in a loan.



Young herd of Guernseys, sired by King of Med-field, on the farm of A. L. Gile, Chinook, (Pacific County) Washington, awarded first prize at the Panama-Pacific Exposition.



The Holstein cow Pompey Pietertje Princess No. 134,203, owned by A. Benson, Lynden, Wash., made a record of 6,316 pounds butter fat and 185.5 pounds milk in 48 hours at the recent Whatcom county fair, thus surpassing the former 48-hour test at any fair in this state. With careful breeding Mr. Benson has the assurance of a future valuable herd an acquisition for which the dairymen of his community may justly feel proud, rejoicing with the owner over this magnificent record.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor

Address all communications to Box  
1604, Tacoma, Wash.  
(Office 511 Chamber Commerce Bldg.,  
Cor. 9th & C Sts.)

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Paid in Advance. Otherwise 75 Cents.  
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S. O. Jayne, Irrigation, Dept. Agr.

S. B. Nelson, Veterinarian.

A. B. Nystrom, State College, Pull-  
man, Wash.

## THANKS AND BLESSINGS.

It has become a custom in this country to observe a day of Thanks-  
giving and gratitude to Almighty  
God for blessings of bountiful crops  
and other things material. The sig-  
nificance of this day for us as a na-  
tion is greater than in many years  
gone by. We have passed through  
some trying times during the year  
but our young men have been saved  
slaughter, and our homes from the  
curse of the sword. Our crops have  
been most bountiful, and as a rule are  
finding markets at fair prices. As  
individuals, it is well to count bles-  
sings, even those afforded through  
trials and hardships. As a rule, the  
privilege of service is not withheld  
from the farmer. He generally has  
plenty to do, sometimes the work  
seems overwhelming and even bur-  
densome, compared with the remun-  
eration. It is well, therefore, to take  
stock, review the many individual  
benefits not based alone on money  
value. The willingness to do this  
leads to broader visions and higher  
plans of usefulness. A person truly  
thankful, is in a receptive mood for  
added blessings.

## PERMANENT FARM PROS- PERITY.

Farmers in the wheat sections of  
Washington, Idaho, Oregon and Mon-  
tana are becoming the bankers of  
their various districts. They are in  
position to develop the live stock and  
dairy industry before the time that  
wheat growing will be far less pro-  
fitable than it is today. May they not  
be blind to observe the needed change  
in time, nor unwilling to act at once  
inaugurating the most permanent  
kind of farming prosperity.

Ernest O. Holland, of Louisville,  
Kentucky, has been elected president  
of the State College of Washington,  
at Pullman, to succeed Enoch A.  
Bryan, who has served as president  
of the institution for 22 years, hav-  
ing brought the college to a high  
state of efficiency during that time.

Dr. Holland is a graduate of the  
University of Indiana, attended the

Columbia University, is a well known  
lecturer and educator, as demon-  
strated at the Louisville School. He  
is 41 years of age.

## SYSTEM IN INDUSTRY AND MARKETING.

The exports of farm and live stock  
products from the United States to  
other countries was nearly twice as  
great in 1915 as for the year 1914.  
Market prices in this country are  
not likely to go to extremes next year,  
and farmers will do well to figure on  
and continue with what they can pro-  
duce to best advantage, most econom-  
ically, that can be sold with some  
measure of satisfaction in their chosen  
locality. Whatever the crops or pro-  
duction seek to line up with some good  
system for standardization and for the  
business of marketing.

## LIME AND FERTILITY.

Leading farmers and experimenters  
are agreed that lime is a basic ele-  
ment in fertility, serving to make  
available for plant nourishment liquids  
and gasses contained in the soil that  
without the presence of lime would  
remain inert. Besides most plants  
and trees take up considerable lime,  
particular is this the case with the  
leguminous class, including alfalfa,  
the clovers and vetch. In several  
sections of the country it was only  
after liberal applications of ground  
limestone that alfalfa could be made  
to grow satisfactorily. In the coast  
section farmers find that liberal ap-  
plications of lime increases these  
crops materially. In some localities,  
particularly on gravelly or sandy  
soil, in Western Washington, it seems  
to be necessary to apply lime before  
a good crop of vetch can be grown.

## CRANBERRIES.

A subscriber desires to know if cran-  
berries can be grown by being planted  
like raspberries and other small fruits,  
the kind of soil suited and how to ob-  
tain plants. For commercial purposes  
cranberries are grown in beds pre-  
pared by removing the top soil and  
dressing with sand. Low lands which  
can be flooded are usually selected  
for the purpose. The plants require  
considerable moisture, but the flood-  
ing is also for the purpose of destroy-  
ing injurious insects. When grown in  
small quantities for family use, the  
plants can be set out and cultivated  
like other small fruits. A moist,  
sandy loam soil is most suitable. There  
are several large cranberry beds in  
Pacific County, Washington, where  
plants can likely be obtained. The ad-  
dress of the owners may be had  
through the Agricultural Commission-  
ers Office, Olympia.

## CO-OPERATION AT LYNDEN.

At Lynden, Washington, the dairy-  
men are working unitedly together.  
The Lynden Cooperative Creamery  
has been a success from the time it  
started, as attested by its manager,  
Warren Hawley, in the Lynden Tri-  
bune:

"It has paid higher prices for but-  
ter fat, and forced the merchants to  
pay higher prices for eggs than other-  
wise could have been obtained on the  
market. Its high prices for these two  
commodities have made it almost im-  
possible for any other creamery to  
operate in this locality. The profits  
have gone right back to its patrons,  
and these have been large, as the  
following statement showing the num-

ber of pounds of butter manufactured  
since it started, illustrates. Notice  
how it has increased from year to  
year:

|                 |       |         |
|-----------------|-------|---------|
| 1902            | ..... | 15,484  |
| 1903            | ..... | 61,936  |
| 1904            | ..... | 82,583  |
| 1905            | ..... | 110,110 |
| 1906            | ..... | 146,813 |
| 1907            | ..... | 195,750 |
| 1908            | ..... | 261,000 |
| 1909            | ..... | 374,800 |
| 1910            | ..... | 468,000 |
| 1911            | ..... | 468,000 |
| 1912            | ..... | 720,000 |
| 1913            | ..... | 800,000 |
| 1914            | ..... | 912,000 |
| 1915 (½ season) | ....  | 500,000 |

Total lbs. of butter ..5,116,476

The net profit that a private con-  
sumer would figure is at least one  
cent per lb. net. This would amount  
on 5,116,476 lbs. of butter to \$51,-  
000.00 that has been paid back to  
its patrons. Now this is only one con-  
cern. There are others that have  
made a great deal larger net profit  
than this. If this were all summed  
up for the last 14 years there would  
be at least \$300,000 that would be in  
the hands of the farmers and other  
patrons instead of in the hands of  
three or four.

The Lynden Cooperative Creamery  
Company has a system and is ad-  
hering in practice to its well estab-  
lished rules. The quality of its  
butter and the condition of the eggs  
handled, are above question or re-  
proach, and buyers recognize there  
is dependable value to be obtained  
at this cooperative association. By  
another year this is one of the large  
manufacturing plants which will figure  
prominently in the export trade of  
butter and eggs to the benefit of each  
individual member.

## FRUIT GROWERS MEET.

The Washington State Horticultural  
Association has an interesting pro-  
gram for the meeting being held at  
Spokane, November 15, 16 and 17.  
Cultural systems will be carefully re-  
viewed, compared and recommenda-  
tions made for improvement along  
that line. The control of the codling  
moth to a specific degree is yet a  
problem. The cost of production of  
fruit properly standardized, as to  
soundness, color, size and pack, needs  
further careful consideration. Ex-  
penses of every turn in the orchard  
must be reduced to the minimum.  
There is no question but what the  
present cost of producing a box of  
commercial apples can and must be  
reduced. How to do it is the prob-  
lem for the many growers working  
unitedly to determine.

## The Business of Marketing.

According to the U. S. Department  
of Agriculture, the general prevailing  
prices for apples to the growers of  
the Pacific Northwest is at least 25  
per cent. higher this year than last.  
But the margin is not what it should  
be. The growers' council has laid the  
foundation for some good future busi-  
ness, but the benefit to be derived  
will depend on the determination of  
growers to work unitedly together in  
this great business of selling their  
products. This phase of the fruit  
problems will come before the asso-  
ciation at Spokane in an educational  
way, and it is very important that  
every detail pertaining to the subject  
should be thoroughly understood.  
Those who are prominent represent-

ing the business of selling fruits are:  
W. H. Paulhamus, manager Growers'  
Council; Mr. Robinson, representing  
the Northwest Fruit Distributors; W.  
F. Gwinn, of Northwestern Fruit Ex-  
change; H. M. Gilbert, manager  
Fruit Sellers, and a number of others  
engaged in the selling business. The ex-  
periences and council of these repre-  
sentatives of the marketing business  
will serve in a great measure for the  
guidance of fruit growers in the fu-  
ture, and from the profit and loss  
standpoint it will pay every commer-  
cial fruit grower to become thorough-  
ly posted regarding the marketing  
problems. The crop is likely to be  
considerably larger next year and it  
is proposed to make up an adver-  
tising fund to influence a larger num-  
ber of consumers to make more pur-  
chases.

Until the great wheels of industry  
are again in full motion to give the  
buying public a larger purchasing  
capacity, unity of action is all the  
more important on the part of grow-  
ers, and for that purpose the horti-  
cultural association affords timely in-  
formation at its meeting this month.

Mr. Henry Bucey has been very  
busy attending farmer's meetings in  
various parts of the Coast Section  
during the past month. His valuable  
lectures on the fertility of Coast soils  
have been highly appreciated by  
those in attendance at the meetings.  
Mr. Bucey is a strong advocate for  
liberal applications of lime. Those  
who desire special information about  
soil problems for their particular lo-  
cality should write full particulars  
and address Henry Bucey, 8th floor  
White Bldg., Seattle, Wash.

## WINNINGS BY WM. BISHOP.

Following is a list of Holstein-Frei-  
sian cattle, prize winners at the Pan-  
ama-Pacific International Exposition,  
shown by Wm. Bishop, Chimacum,  
Wash.:

North Star Korndyke Sir Beets.  
Sir Chimacum Wayne.  
Sir Fayne Dot Cornucopia.  
Sir Chimacum Wayne Pontiac.  
Sir Chimacum Wayne Dutsche  
(twin).  
Sir Chimacum Wayne Cornucopia  
(twin).  
Bonnie Ormsby Lass.  
Hazelwood Ormsby Posch 2nd.  
Nana Kaan Selah.  
Aaggie Nena Cornucopia.  
Nana Newman Cornucopia.  
Riverview Chloe Mechthilda.  
Violet Fayne Pieterje.  
Chimacum Veeman Pontiac.  
Bonnie Ormsby Lass 2nd.  
Chimacum De Kol Ononis.  
Chimacum Wayne Gettie.  
Bonnie Ormsby Lass 3rd.  
Chimacum Wayne Jennie.  
Cascade Marie.  
Dot Monarch Vale Cornucopia Vale  
2nd.

Chimacum Wayne Gettie.  
The above prize winners included  
10 firsts, junior champion bull, senior  
champion heifer, senior champion  
with Cascade Marie cow, and grand  
champion cow, with Bonnie Lass Pau-  
line.

Cascade Marie was purchased from  
Wm. Todd & Sons, North Yakima,  
by Mr. Bishop two years ago at a  
long price. She was an outstanding  
winner at Salem, Oregon, as well as  
at the Panama-Pacific Exposition.



**POTATO GROWING.**

According to investigations by T. O. Morrison, Division of Horticulture, Olympia, Washington, the Netted Gem is now the leading variety grown in this state.

It is suggested that growers here plant more of the early varieties, such as Early Rose, American Wonder, Earliest of All, and etc., for in 1914 we imported not less than 300 carloads from May to August.

At the present time Late Blight, Scab, Dry Rot (*Fusarium*), Rhizoctonia, and Black Leg are accountable for a considerable reduction in the potato crop. For the control of practically all of these diseases the first requisite is clean seed, or seed that has been properly treated when such treatment is practical.

To plant diseased seed means that the plant and its product will be diseased. The presence of blight, for example, can mean but one thing, and that is that the seed planted was diseased, and it is first of all important that the potato grower know common potato diseases. The haphazard planting of any and all potatoes from the pit or cellar must stop if any improvement is to be made. Tubers should be dipped in formalin or corrosive sublimate and then examined while still wet for disease and all except clean smooth tubers should be rejected as unfit for planting.

Cutting should be done by hand so that the stem ends may be clipped to determine whether or not *Fusarium* is present. In the large potato districts of California the growers have for some time realized that in order to grow a clean crop of potatoes or one that is even salable, that they must exercise every precaution within their power. Seed treatment is generally practiced there, and this year they had very good results with corrosive sublimate seed treatment for Rhizoctonia as well as scab.

Since most of the diseases which effect the potato fields of this state have without much doubt been introduced by planting infected seed it is evident that they will be on the increase so long as diseased seed stock is used. To control or eradicate any of these diseases from soils already infected, it may be necessary that the cull potatoes be removed from the field at digging time, else these cull potatoes, many of which harbor disease, would carry the disease over and produce volunteer potatoes another year which will also develop the disease, and lengthen the period when another crop can be grown with any safety.

In whatever locality seed potatoes are grown they should be selected for uniformity, productiveness and freedom from disease. Trained men are required to handle this work successfully, and growers who are unwilling to train themselves to do this careful work should not be averse to paying a higher price for good seed stock than for the miscellaneous product now upon the markets or the ordinary food product which may be upon the market at the time they purchased their seed stock. With potatoes it is even as important as with many other crops that good seed stock be used, since it is the only way that permanent success may be had in growing potatoes. Certainly clean seed stock is

the important thing in improving the potato industry in the State of Washington.

**GRAFTED WALNUT TREES.****Buying and Planting the Stock.**

When ready to buy grafted walnut trees the buyer should use good judgment and discretion. Select from nurserymen who have taken pains to procure scions of good, dependable stock.

The nurserymen are right to a certain extent to produce trees as cheaply as possible for the farmer will buy where he can get the cheapest trees. These "cheaper" trees, as a rule, prove to be very dear ones when they come into bearing. Often you will hear a farmer say, "I wish I had bought the other trees and would give many dollars a tree for a good strain of walnuts." In buying walnut trees one should buy from a nursery that goes out into the orchard and selects the trees which are the best in production, size, and resistant to diseases. Walnut trees that have been selected, as they should have been, have brought in very fine incomes. When you have engaged trees where you are reasonably sure of good quality, you then should consider the best way to plant and care for them. A good size hole should be dug (you can tell by the long tap root), just a little larger than the root. The soil at the bottom of the hole should be loosened well, permitting the roots to start as soon as the weather permits. The ends of the root must be trimmed with a knife, not shears, so as to produce a smooth cut. Plant the tree as it stands in the nursery row and do not plant below the graft. Pack the dirt well around the tree so the air cannot get to the roots. The trees should be cut about thirty inches above the ground after planting. Always cut the top on a slant from the south, so when the rains start the water will not remain on the top of the tree, causing it to die back. The top should be carefully waxed, as the walnut has a hollow center and dries out very quickly. The walnut should be pruned for a number of years, to produce shape and plenty sunlight in the center, which is a big factor in the bearing qualities of the tree. It can not be emphasized too strongly to be too careful in purchasing trees from which is figured your future income.—L. H. ELMER, Mgr. Elmer Bros. Nursery, San Jose, Calif.

**OWNERSHIP STATEMENT**

As required by Act of Congress. The editor, business manager and proprietor of the Northwest Horticulturist & Dairyman, published at Tacoma, Washington, is C. A. Tonnerson. There are no bond holders or share owners holding one per cent or more of this property. Not incorporated.

(Signed) C. A. TONNERSON.

Subscribed and sworn to before me this 4th day of October, 1915.

C. D. SAVORY,  
Notary Public in and for Pierce County, residing at Tacoma, Washington.

**THE WORLD'S GREATEST DAIRY RECORD.**

Sophie 19th of Hood Farm, the world's champion Jersey cow, has completed another year's record, which we believe stamps her as the

**The Scandinavian American Bank**

OF TACOMA, WASHINGTON

With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail

**BUY GOOD FURNITURE**

If your Local Dealer does not have what you want in stock, ask to see our

HARMON FURNITURE

with a

Big New Catalog Double Guarantee

In it you are sure to find exactly what suits your individual taste.

The price is less and QUALITY BEST

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Low enough to meet any competition.

WE Guarantee

everything to be exactly as Represented in our Catalog -- So does your dealer, Therefore you have a **DOUBLE GUARANTEE**

**F. S. HARMON & CO.**

Manufacturers of High Grade Furniture

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and compare the cost of HARMON FURNITURE with other Furniture. If you do you will find that it is Lower Priced and more convenient to buy Furniture through your Local Dealer

**Evergreen Ornamental Plants**

ROSES AND SHRUBS

Eighteen acres in choice ornamental Plants, Hollies, English, variegated, berried, from 1 foot up, some with berries on; fine large assortment in this class.

**Laurustin**—The attractive winter blooming evergreen. Adapts itself to any position in which it is placed. A plant of beauty affording great satisfaction in the Coast Section.

**Roses**—Our stock is very complete, with clean, strong plants which can be made to bloom heavily next season. We have all the new varieties and will freely give the benefit of our experience as to comparative merits of the different varieties for blooming and general satisfaction.

J. J. BONNELL,

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Seattle, Wash.

**Lewis County Farms**

We make a specialty of Lewis County lands. The best for farming, dairying and stock raising in Western Washington. Well improved farms that raise 100 to 120 bu. oats, 35 to 50 bu. wheat or 5 to 6 tons of hay per acre. On daily mail, milk and cream routes, phone line, etc. Close to good market, railroad and schools, \$50 to \$100 per acre, including stock, tools and machinery. Write for our list.

ACME REALTY COMPANY

401 Equitable Bldg, Tacoma, Wn.

**FOR RENT.**

Good bearing orchard of about four acres, enclosed, subdivided and piped with running water; well equipped for poultry, and a good 7-room house; beautiful location at Burton, in view of residence part of Tacoma. For further particulars, address

NORTHWEST HORTICULTURIST  
Box 1604. Tacoma, Wash.





greatest dairy cow in the world of any breed.

In 1914 "Sophie" broke the Jersey breed record with a production of 17,557.8 lbs. of milk, 999.1 lbs. of butterfat. She calved on August 21, 1914, and was started on September 20th on the test which she has just completed. Milked but twice a day, and carrying a calf 175 days of the test, "Sophie" completed her sixth lactation and sixth year's record with a production of 11,915.4 lbs. of milk, containing 680.5 lbs. of fat, or 800.6 lbs. of 85% butter. Her six records are as follows:

| Age              |          | Milk<br>lbs. | Butter<br>lbs. (85%) |
|------------------|----------|--------------|----------------------|
| at Start of Test | Yrs. Mo. |              |                      |
| 2                | 2        | 7,050.2      | 446                  |
| 3                | 8        | 9,924.8      | 672                  |
| 4                | 11       | 14,373.2     | 1006                 |
| 6                | 7        | 15,099.4     | 1097                 |
| 7                | 11       | 17,557.8     | 1176                 |
| 9                | 7        | 11,915.4     | 800                  |

A total of 75,920.8 lbs. of milk, 5,217 lbs. of 85% butter, for six consecutive lactations earns "Sophie" the title of World's Champion Long Distance Dairy Cow. "Sophie" 19th of Hood Farm is owned by Mr. C. I. Hood, of Lowell, Mass., and was tested under supervision of the Massachusetts Agricultural College.

—The American Jersey Cattle Club.

The Puget Sound herd, from Chimacum, Wash., made 23 entries at the P. P. I. E., and received a majority of the championships and half of all first prizes awarded to Holstein cattle at the Exposition.



H. C. Davis, Granger, Wash., whose sound judgment on breeding and feeding is varified both in the show ring and in milk and butter production, is consigning 29 Holsteins to be sold during the Cascade International Stock Show Friday, November 29th.

#### THE GRAND CHAMPION HOLSTEIN COW.

Bonnie Lass Pauline.

This grand champion cow shown by Mr. Bishop was sold at public auction at North Yakima April 15th, from the Mills herd, to the Hollywood company for \$2775. After the sale they objected to her, says Mr. Geo. Gue, on the ground that at calving time at the fair grounds here before the sale she had retained the placenta. Mr. Mills arranged with me to go to Hollywood and see what could be done with reference to have them keep this wonderful cow. The animal showed a run down condition and I took her off their hands after an understanding with Mr. Mills that she was to remain in my herd as a partnership cow.

Heifer Won at Chicago.

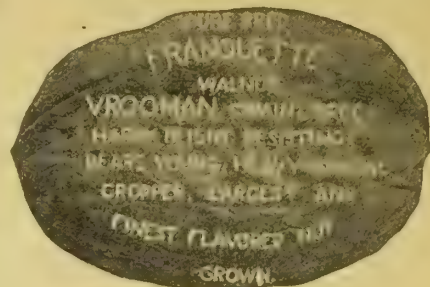
"From Hollywood I took the cow to Mr. Bishop's place at Chimacum where she was cared for and where she was bred to his world's record milk bull. This is the heifer that won the grand championship at the

## Walnut and Ornamental Planting

Several years ago we introduced the Franquette Walnut to the planters of the Pacific Northwest as a variety par excellence, and its popularity, as well as the walnut industry, has grown beyond our fondest anticipations. We are supplying thousands of trees to all parts of the coast. Those who have not already ordered for intended planting should do so at once, or disappointment for lack of stock may result. This is our busy season, shipping choice ornamental trees, shrubbery, and rose plants of latest introductions that are suitable, as well as the standard hardy sorts of all parts of the country.

Write for the Walnut Book, the Rose Book, or for our complete catalog and price list. Make your wants known on landscape designs.

**OREGON NURSERY CO.**  
ORENCO, OREGON.



## Ground Limestone

Thousands of farmers in the Coast Section of the Pacific Northwest are preparing to buy ground limestone, to be spread over their lands during the rainy season. This basic element of soil fertility is now put on the market at prices within reach of all producers.

Freight rates for delivery in car or ton lots are being arranged. Those preparing to buy will please give name of their local station, the amount of lime required, when writing to ascertain cost delivered.

**Superior Portland Cement Co.**  
Northern Bank Bldg.  
Seattle, Wash.

**Washington Portland Cement Co.**  
White Bldg.  
Seattle, Wash.

Chicago international as a three-year-old. Now, in her full aged form at San Francisco, with the handicap of being six months from freshening and with the additional handicap that for the first 30 days after freshening she was in a critical condition, and was under the care of two veterinarians, she wins the grand championship at that great exhibition, which shows her outstanding quality as a show animal. She has an official record as a junior three-year-old of 25 pounds in seven days and her dam has a record of over 33 pounds in seven days and over 100 pounds of milk in one day.

Will Get Official Test.

"This animal is not only the highest priced Holstein ever sold in the West, but is beyond doubt one of the greatest cows in the world today. It is my intention to give this animal a splendid rest, if possible to get her dry in time, and try to give her, at her next freshening period, as good an official record as can be established. This cow makes one more monument for the great cattle in the State of Washington, and will help to add a little more prestige to the already high class reputation that the Yakima valley is fast establishing as to dairy cattle."

#### SMITH AND DAVIS EXHIBITS.

Mr. J. L. Smith, of Spokane, has been famed as a leading Holstein breeder of America by the California press. This distinction arose from his award of grand champion bull and at least six other first prizes.

The Holstein breeders of Washington are working harmoniously together and it is through their combined efforts that the State of Washington made such grand winnings in this breed against strong competition at San Francisco.

In this connection, Mr. H. C. Davis, of Granger, may justly feel elated in confirmation of his good judgment in breeding dairy cattle. At the State



#### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.

The Walnut Book is a new, neatly printed publication in booklet form, published at Orenco, Oregon, at \$1 per year. It is devoted to the promotion of the walnut industry, both cultivation and marketing. We will send it to any new or old subscriber, together with one year's subscription credit for the Northwest Horticulturist and Dairyman on receipt of \$1. Address Box 1604, Tacoma, Wash.

#### Two Registered Jersey Bulls For Sale

A three-year old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

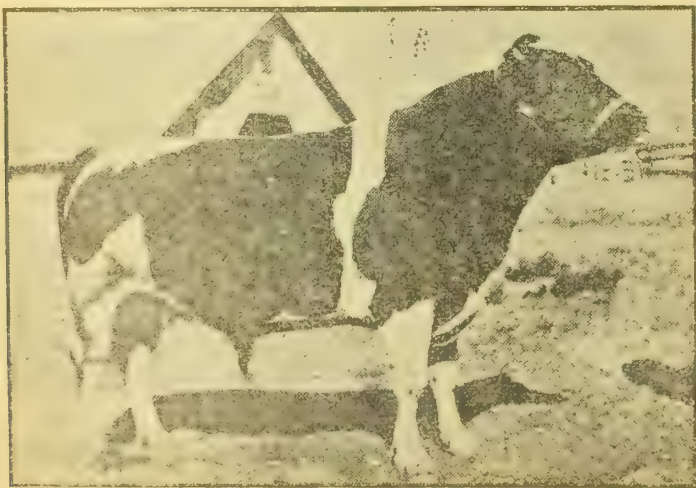
The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT** Dungeness, Wash.

Fair, North Yakima, his young bull Mutual Lad Tritoma was awarded grand championship over Mr. Smith's bull which won this prize at the P.-P. I. E. Evidently there is great value to the youngster owned by Mr. Davis. Mr. E. B. Marks has some young Holsteins which are likely to make world records both as individuals and as a herd.



E. B. Marks, North Yakima, will offer 32 head of pure bred Holsteins at the public sale Friday, November 26, during the Cascade International Stock Show, to be held at North Yakima. Mr. Marks has deservedly won the title of "Holstein Home" because of the excellent quality of his herd.



Holstein sire Johanna Colantha Champion, which has been worth a large sum of money to Wm. Todd and Sons, who are consigning 6 head to the sale on Friday, November 26, Cascade International Stock Show. That a good pure bred sire pays extremely well has been fully demonstrated in this herd.



# AGRICULTURE

## The Basis of Prosperity

### The Great Cascade International Stock Show

Will be Held at North Yakima, November 22-27, 1915

The Cascade International Live Stock Show to be held at North Yakima November 22-27, will be one of the greatest educational features ever placed before the public in the Northwest along live stock lines. Dr. S. B. Nelson, the secretary, has worker indefatigably to bring together the very best live stock west of the Missouri River and success is assured to a very large measure.

President A. J. Splawn, who also had charge of the Washington State exhibits at San Francisco has secured at least 10 car loads of live stock consisting of the greatest prize winning herds at the P. P. Exposition for the Cascade show. Included in these will be Ayrshires, owned by J. W. Clise, whose fame have become world wide because of both milk and show records unequalled any where so far as known. The Domes herd will also be shown.

The Holsteins, in charge of John L. Smith, were leading prize winners in California, Holsteins by Wm. Bishop, Chimacum, E. B. Marks, North Yakima, H. C. Davis, Granger, Wm. Todd & Sons, North Yakima; John Heffernon, North Yakima; Tyson & McKelheer, Moxee; Geo. A. Gue, North Yakima, and Charles Mead, Wapato.

The Guernsey exhibits will include the herds of D. F. Looney, Jefferson, Oregon, and A. L. Gile, Chinook, Wash.

A good line of Jerseys will be put in by J. B. West, of the Willamette Valley; Guy C. Chapman, North Yakima; A. H. Heubner, North Yakima; Bert Pease, Ellensburg, and J. B. Early, Grandview.

#### Beef Breeds.

Among the fat stock cattle to be represented are Herfords owned by Henry Tiesen, Sweetwater, Idaho; Geo. Chandler, Baker City, Oregon; Miles C. Thompson, Helena, Montana, and A. B. Cook, of Townsend, Montana, who is the owner of the bull, Fairfax 16, an undefeated champion. Cook has made entries for nineteen of his best Herefords, among them several of Fairfax's progeny. This will be the best exhibit of Herfords ever shown in the West. Short Horns will be represented, among others, by A. D. Dunn, of Wapato; J. H. McCroskey, of Fishtrap; Frank Brown, of Carleton, Oregon, and A. D. Chalmers, of the Willamette Valley, in Oregon.

There will also be other classes in cattle besides very complete exhibits of sheep, goats and hogs picked from among the winners at the numerous fairs held during the past season.

At least 24 carloads of live stock are guaranteed for this show, besides a considerable amount of fat stock from local points and a good number of horses.

#### Corn Show.

The O. W. R. & N. Company will display a very interesting exhibit of corn from fields in the Pacific Northwest whose records of yield have been phenomenal. President J. D. Farrell has advised Secretary Nelson that his company will be responsible for this part of the show, and the farmers of the Pacific Northwest who have been figuring on growing corn to round off the fatted stock and for the purpose of balancing the feed ration for dairy cows, will come prepared to inspect the best corn the fields of the Northwest has produced up to date.

#### Transportation Rates.

The Show management is advised by the Northern Pacific that the following rates have been allowed:

"Shipments will pay full rate from the point of origin to point of exhibition and on return from such point of exhibition to point of origin, free rates will be granted; provided no change of ownership has occurred. It is further provided that when exhibits are sent to more than one Fair or Exposition, regular tariff rates apply, except that freight will be returned free from the last point of exhibition at the owner's risk, to the point of shipment of the N. P. line. Should the animals be sent from the Yakima show to the Lewiston, Idaho, show, full rate would apply from North Yakima to Lewiston, returning from Lewiston to the point of origin free. If exhibits follow the circuit of fairs, one-half the full tariff rate will be assessed for the movement from point of origin to North Yakima, one-half full tariff rate from Yakima to Lewiston, Lewiston to Portland, and Portland back to the original point of shipment."

For the public attending the show, the usual round trip fare of one and one-third on the certificate plan, will apply. Going dates announced are from November 12th to 24th inclusive. Returning dates, November 27th to December 4th inclusive.

#### Sales End a Winner.

George Gue, who has charge of the sales end of the fair, says that the sale stock to be brought here is daily increasing in quantity and the sale will be remarkable for two features. One of these is the quality of the animals which breeders are entering and the other is the superiority of the opportunity offered to purchasers to get animals bred in the purple and produced at great expense by men who have made a study of the problems. The sales feature of the show, which will continue for three days, will, according to Mr. Gue, be a revelation to the people.

We can save you money on

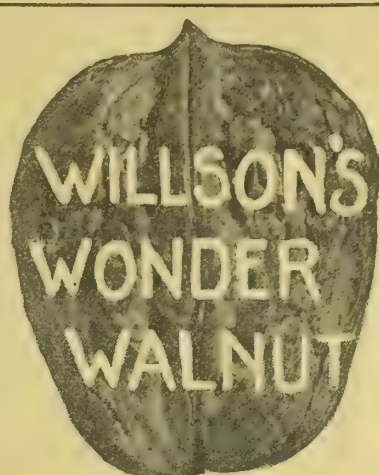
Our Specialties

**SASH, DOORS, MILLWORK ETC.**

CLEAR SHINGLES with butts 1/2 in. thick.  
Dimension Lumber guaranteed 2 in. thick.  
Mixed Carloads or small lots at wholesale prices to consumer.

CATALOG ON REQUEST  
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**FOSTER LUMBER CO. TACOMA**



**NATURAL SIZE**  
The greatest Walnut in existence.  
The earliest heavy bearer. Write for Circular.

**EINCINAL NURSERIES**

F. C. WILSON, Prop.  
Sunnyvale, Santa Clara Co., Cal.  
Telephone 17-J

### "Cargo" KILLS MAGGOTS

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers, who are highly pleased with results.

#### SOME OF OUR PRODUCTS

Fish Oil Soap Lice and Mite Liquid  
Fly Chaser Carbolineum  
Creosote Crude Carbolic  
Disinfectants Wood Preserving  
Materials

For Sale By All Leading Seed Houses  
On Pacific Coast. Ask For It.

Manufactured ONLY by

**Standard Chemical Company**

TACOMA, WASH.

(Send for Circular)

### SALESMEN WANTED

to sell our complete line of roses, flowering shrubs, shade and ornamental and fruit trees and small berry bearing plants. We teach you how to sell, furnish a complete outfit and pay commissions weekly. Our representatives are making big money. No experience required. Write at once to

**ORNAMENTAL & FRUIT NURSERY CO., Box 217 Wapato, Wash.**

### Sherbrooke's Marvalous Daihlas

### Sherbrooke's Oregon Roses

(The World's Finest)

Grown by

**W. E. Sherbrooke**

Cornelius, Oregon

Rose and Dahlia Specialist.

Quality the highest. Prices the lowest. Catalogues mailed on request.

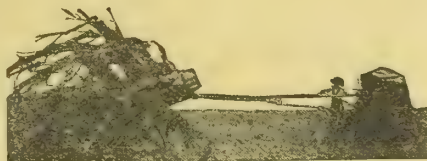
Let's get acquainted.

### VETCH AND CLOVER SEEDS

That are tested by the famous O. A. C. germination and purity test. All seeds double sacked to prevent loss by leakage. We can furnish for prompt shipment, Red and Alsike Clover and Winter Vetch. Also Winter Rye, Barley, Wheat, Oats, and all kinds of grass seeds. Lowest market price f. o. b.

**Corvallis Flouring Mills**

Corvallis, Oregon



One man with a "K" Stump Puller exerts more power than 16 horses. Can pull, single-handed, from 50 to 150 stumps per day. Rips out any stump that can be pulled by any horse-power machine, and at about 1/2 the cost; 1/4 the cost of dynamite.



HAND POWER

**Stump Puller**

works by leverage—same principle as a jack—power multiplied many times. Works easy as rowing a boat. Made of Krupp steel. Guaranteed against breakage.

Send for my special offer and free book on Land Clearing.

**Walter J. Fitzpatrick**  
Box J. 182 Fifth Street  
SAN FRANCISCO, CALIF.

FOR FALL  
PLANTING

**BULBS, ROSES, TREES**

64 page

**Autumn Catalog**

listing the most profitable and satisfactory varieties for commercial and home planting. Write now. Ask for catalog No. 51

**PORTLAND SEED COMPANY**  
PORTLAND, OREGON



## COW TESTING ASSOCIATIONS.

The Grays Harbor county dairymen have organized a cow testing association with 508 cows pledged through the efforts of C. F. Monroe, county agriculturist, and A. J. Lashbrook, special dairy extension worker. The officers are: E. L. Brewer, president; Parker Askew, vice president; R. G. Trask, secretary; W. F. Darby, treasurer; John Porter, director. The association was named the Montesano Cow Testing Association because of the courtesies extended by the businessmen of Montesano.

Enumclaw, Washington, is conducting a cow testing association for the second time. Thirty-five members with 510 cows are enrolled.

Walla Walla and North Yakima counties also have testing associations. In these groups more than 100 dairymen will be able to determine the exact margin of profit produced by each cow in their herds. Besides they will have a chance to compare the values of cows from pure bred sires backed by good records as compared with those bred and raised without any definite purpose in view.

## GRADING UP.

A few years ago Mr. F. M. Svinth, of Chehalis, Wash., launched out on his present dairy farm, buying such grade Holsteins as he could obtain at reasonable prices. He soon discovered by observation and testing that some of them paid a larger margin of profit than others, and deciding about three years ago to grade up bought a pure-bred Holstein sire backed by high record producers, from the Hollywood Farm. An official test was recently made on one of his two-year-old heifers which showed a yield of 17 pounds butter in seven days. For the coming year he can see a large margin of profit due to the use of this pure-bred sire. It is only a question of a few years until his cows will be in the 25-pound class.

## Curing Bacon and Hams

Three years ago an Australian recipe for curing bacon and hams was published in this paper. A number of our readers tried it out with super excellent results. As several requests have recently been made for a good bacon curing recipe, we are again giving the essential parts of this formula, obtained from H. W. Potts, principal Hawkesbury Agricultural College, near South Wales, Australia. A considerable number of farmers in the Pacific Northwest figure that by a little painstaking efforts they can benefit by obtaining a part of the margin between the 8-cent hog market price to them and the 22-cent bacon price paid by consumers, when they make a good article and use the parcel post service, for conditions here are very favorable for good curing.

The flesh of the pig does not absorb or take up salt so readily as other meats, owing to the large pro-

portion of fat to lean. The length of time pigs' flesh should be submitted to the influence of salting depends on various conditions. Some breeds of pigs give a greater proportion of fat. The absorption of salt in this case is slower. The size, thickness, age and weight of the flitches and hams have to be considered.

It requires less time to cure in a damp cellar than in a dry room. The extremes of heat and cold are unfavorable. In the former case, flesh is liable to decompose before the salt permeates it sufficiently to cure it. Where subject to an excessively low temperature, the meat juices become set and the flesh too firm for the salt to penetrate.

### Temperature and Salting.

It should be noted that the temperature of the curing room should never exceed 60 degrees Fahr. Precautions should be observed to have



# "I PULLED ONE ACRE PER DAY WITH 3 MEN."

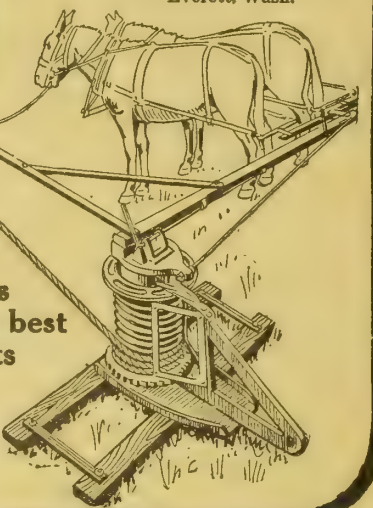
**Simple and easy to operate**

The SWENSON MALLEABLE has no complicated sets of pulleys to confuse you and get out of order. It is the only puller made the cable of which is guaranteed to wind in perfect order one layer deep from bottom to top. It is the embodiment of simplicity and power. It is no flimsy machine like some so called stump pullers you have seen which are made of light castings and are operated only at the operators risk of life or limb. The SWENSON MALLEABLE is a strong powerful machine especially adapted to conditions in the northwest.

WE GUARANTEE the SWENSON MALLEABLE against flaws and breakage and we agree to replace free of charge any part broken within one year from purchase date, flaw or no flaw. Send for free book No. and particulars.

and which would have cost me \$40.00 per acre by hand. I took out fifty acres and the machine was as good as new and I sold it for almost as much as I paid for it. It costs more than others but is the cheapest in the long run. My neighbors laughed at me for paying more. They bought cheap machines, now one has broken his leg and the other got his foot smashed; so they think now I have the best machine after all. It gives satisfaction.—  
Yours truly,  
Joseph Riddles, Saver, Polk County, Oregon.

In buying a stump puller your first concern is: "What is the cost of clearing land."? The SWENSON MALLEABLE is sold under a positive guarantee to save you from \$5 to \$25 per acre as compared with any other stump puller, and under an absolute guarantee of your money back if not satisfied. Mr. Christian Nelson of Luana, Iowa has used almost every stump puller on the market and his lowest cost per acre with any other puller was \$14.88 while with the SWENSON MALLEABLE he cut the cost to \$4.48 per acre and the time from four days to one and one-half days.



## THE SWENSON

IMPROVED STUMP PULLER

Fastest and Best

**Read What this Man Has to Say!**  
Swenson Grubber Co.,  
Gentlemen: Have used one of your No. 2 stump pullers for the past year with the best of results. Can remove stumps from 6 in. to 18 in. in diameter readily.  
—Yours truly, W. D. Anderson, Everett, Wash.

**R. M. WADE & CO.**  
SINCE 1865  
PORTLAND, ORE.

Whole-sale Distributors for the Northwest

CLIP AND SEND THIS COUPON TODAY

**R. M. WADE & CO.,**  
Portland, Oregon

Send me without obligation Free Book No. testimonial letters and particulars regarding the Swenson Malleable Stump Puller.

Name \_\_\_\_\_

Address \_\_\_\_\_

"Wade quality has meant the best implements for over half a century"

## WASHINGTON STATE DAIRY-MEN'S CONVENTION.

The 23rd Annual Convention of the Washington State Dairymen's Association will be held at Snohomish, Wash., Dec. 15, 16 and 17. A very interesting and instructive program is being prepared and all who are interested in this important branch of agriculture should plan to attend.

A one and one-third fare for the round trip on the certificate plan has been granted by the railroads in the state and it is urged that all delegates to the convention buy a one way ticket and get a receipt. This will entitle the holder to purchase his return fare at one third the regular rate. A. B. NYSTROM, Secretary-Treasurer Pullman, Wash.

## VETCH SEED

Fancy New Crop Vetch Seed direct at wholesale rate. Special prices in ton lots.

## Fancy Red Clover Seed

New Crop, Oregon Grown, the finest in the world, now ready for market. Write for prices. All our seeds guaranteed to comply with all the state seed laws. Also a complete stock of Grass Seeds, Clovers, Seed Grain, etc. Send us a list of what you want now and get our prices.

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SEEDSMEN

Salem, Oregon

the tables and room in which curing is conducted scrupulously clean, free from dust, and with a sweet atmosphere.

It was at one time deemed good practice to rub the flesh briskly every day, but it is generally found that this is only necessary for the first three days. The salt mixture only requires to be spread over the flesh firmly. An exception may be made in the case of large thick pieces or where the flesh is very cold; then brisk rubbing is an advantage.

The salt should be pressed into every depression and well into the hock ends where the feet have been cut

## PLANT Walnut Trees

ORNAMENTAL and SHADE TREES and FLOWERING SHRUBS.

Thus you can enhance the value of your place by a little attention to nut growing and ornamental planting. This may be brought about at a surprisingly small cost in proportion to the actual value afforded. Here are some of the select varieties—

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Franquette, Mayette, Chaberte, Cordiformis and Sieboldi.

### IN ORNAMENTALS:

Hydrangeas, Lilacs, Snowballs, Syringas, Deutzias, Mountain Ash, Spireas, Labernums, the great variety of roses and small evergreens.

We have as fine an assortment of the staple deciduous shade trees, shrubs, vines, roses, etc., as can be found in any nursery in the West. A line will bring catalog and information. Our salesmen cover almost every field.

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Good stock. Prompt service.

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**HAMS! BACON! LARD!**  
Farmer, hog raiser, any one who owns a hog, learn to cure meat. Get a working knowledge of pork packing. Add the difference between 8-cent pork and 25-cent bacon to your OWN bank account. For particulars, free, send postal  
**W. H. Bruce, Merrill, Oregon**



off, and into the joints. To continue the hard rubbing too long results in a hardened cured flesh. Brown sugar is used in varying quantities with salt, in order to correct the hardening influence of salt on the meat. It also renders the bacon mellow, and increases its juiciness and flavor.

Sugar may also be classified amongst the mild antiseptics as a meat preserver.

#### The Purposes of Saltpetre.

Saltpetre, also known as nitre, or potassium nitrate, is used in curing. It possesses antiseptic properties, but it is chiefly added to preserve the natural color of the flesh. When salt is used alone, the natural flesh color fades and lessens the attractiveness of the bacon. Attention must be given to the quantity used, as it has the effect of unduly toughening the meat if applied in excess. The quantity should not be more than one part to 25 parts of salt.

#### Flavoring Agents.

All ingredients used in the mixture applied for curing should be of the best quality, and thoroughly mixed.

Flavoring agents of a harmless nature are frequently used, and may be selected from the following: Cayenne pepper, white and black pepper, nutmegs, corianders, garlic, juniper berries, bay leaves, allspice, ginger, sage, cloves, cinnamon, bruised shallots, thyme, mace, marjoram, mustard.

#### To Fix Color.

Immediately after cutting up and trimming, the surface of the flesh should be sprinkled over with equal parts of finely-ground salt and saltpetre. This is best effected through a muslin bag or a horse-hair sieve. Only a small layer is required. This is allowed to remain for twenty-four hours, and washed off with clean, cold water. It acts as a mordant, to fix or render permanent the natural color of the meat.

#### Pickling.

Numerous recipes are available for pickling bacon. The following is recommended: Clean rain water, 20 gallons; fine dairy salt, 50 lbs.; brown sugar, 5 lbs.; saltpetre, 2 lbs.; allspice, ½ lb.

Dissolve the salt, sugar and saltpetre in the water. Immerse the allspice, tied up in a calico bag. Boil for one hour, and skim off the frothy matter rising to the surface whilst boiling. Allow this solution to cool before filling the pickling vat, barrel or tub. This is sufficient for 500 pounds of meat. The sides should be rubbed with salt for two days before being immersed in the pickle. It may be necessary to place sufficient weights on the sides to keep them immersed. The time in pickle will be determined by the size of the sides, but it is usually three weeks.

#### Dry Curing.

This recipe has given good results: Fine dairy salt, 50 lbs.; brown sugar, 5 lbs.; saltpetre (finely ground), 2 lbs. Mix well.

For the first three or four days this mixture should be rubbed in over the flesh parts and around the bones and joints. Afterwards spread the mixture freely each day. The sides should be stacked. Alternate the method of stacking, so that the side on the top one day will be at the bottom the following day. Time required, about fourteen days, according to size of side.

Where a sweet, juicy, mild-cured

bacon is required, the following may be used instead of the foregoing: Sugar and fine dairy salt, equal parts. Mix well.

To impart a distinctive flavor, this famous French recipe is given: Fine dairy salt, 6 lbs.; brown sugar, 6 lbs.; allspice, 1 lb.; mustard, 1 lb.; saltpetre, 1 oz.; bicarbonate of soda, 1 oz. Mix well.

Rub over the flesh daily for three days, and afterwards spread on each day for seventeen days turning the sides in rotation.

#### Washing.

On removal from the pickle, or at the conclusion of the dry-salting, the side must be prepared for smoking. The flesh is brushed over with a brush to remove salt, pieces of fat and flesh, and cleaned up. The side is washed in rain-water and soaked in a solution of bicarbonate of soda for twenty-four hours. The solution is made by dissolving one pound of bicarbonate of soda in 20 gallons of clean rain-water. This removes excessive saltiness and makes the curing milder. Follow this by washing in clean pure water.

The meat edges and bones are trimmed again. All sharp points of bones and loose or hanging pieces of meat are removed, leaving the side neat and shapely.

Hang the side up to dry in a room, free from dust and insects, with a full current of air, for several days. Then lightly rub olive oil over the skin and flesh. It is now ready for smoking.

#### Smoking.

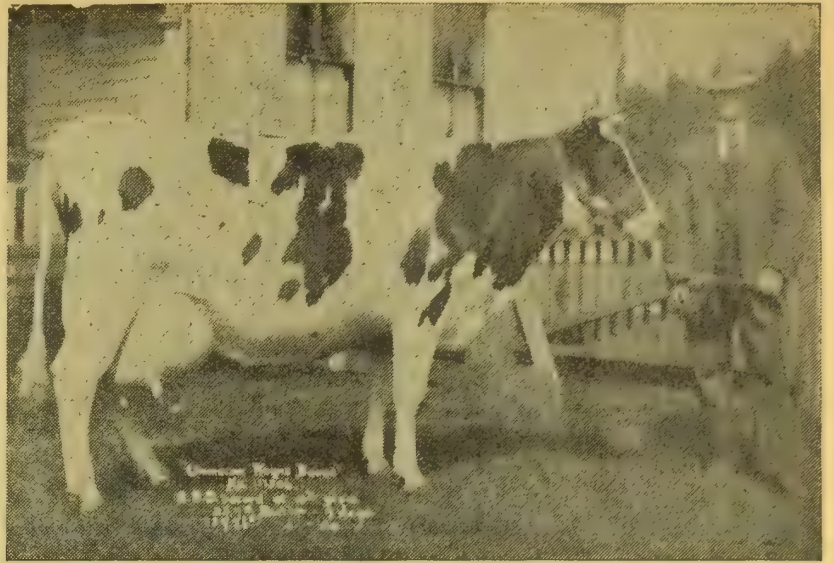
In addition to the preserving action of smoke it imparts a relishable flavor which adds to the value of the bacon.

The process of smoking preserves flesh by coagulating the albumen near the surface and forming a protective covering or envelope. It has been ascertained that in smoking bacon there is no loss of nutriment, and it is as digestible as fresh meat. The smoke creates a distinct antiseptic or preservative action apart from the dried albuminoid coating by depositing on the surface from the smoke creosote, formaldehyde and pyroligneous or crude acetic acid. These check the action and growth of putrefactive organisms and their processes. They retard decomposition, as well as imparting a delicate and appetizing flavor.

The smoke house should be about 12 feet high, seeing the bacon must be hung from 6 to 10 feet from the floor. The floor should be earthen, brick or cement, with a depression in the center, away from the walls, in order to avoid setting fire to the frames. There should be no light, excepting that admitted from the door when open. Sunlight has a tendency to bleach the bacon and deprive it of its natural color.

What ventilation is provided, and some is needed, should be under control. The aim is to surround the bacon with a dense atmosphere of smoke at a low temperature.

Many methods of creating a proper class of smoke are applicable. White pine, oak, cedar, or hardwood sawdust, with damp corn cobs and a few green eucalyptus leaves will answer from which to kindle a fire with a good development of smoke without much heat; or sprinkle essence of smoke (pyroligneous acid or crude acetic acid) over the smouldering sawdust.



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"Quirinus Cornucopia," whose six of the first daughters to be tested, have averaged 19 lbs. butter in 7 days as 2-year-olds. They are all making good in yearly tests including "Chimacum Wayne Boon 2d," 2 years old. She has just finished a years test of 21,572.1 lbs. milk and 881.68 lbs. butter. This record is the highest in the west for both milk and butter. She is a sister on her dams side to "Sir Chimacum Wayne," the world's greatest average record milk and butter bull. He is also brother on his sires side to the world's record heifer "Aaggie Nena Cornucopia."

Young bulls up to one year old are now being offered for sale from the above sires.

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Grown on Vashon Island. Absolutely free of weed or grass seed. Also Tom Thumb pop corn, that will pop. Either prepaid at 15c ¼-lb.; 25c ½-lb.; 35c 1-lb.

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In case of direct heat reaching the bacon hanging over the fire, this can be avoided by having a sheet of galvanized iron placed a few feet over the fire, supported on loose bricks. The smoke must be conveyed to the bacon as cool as it can be. To do this, care must be exercised in preventing direct heat reaching the bacon.

In deciding the length of time to apply smoke, judgment must be used. The desirable color is a light brown tan. To obtain this, smoking may occupy any period from thirty-six hours to five days. The character of the flesh, its thickness and other characteristics must be estimated in order to obtain perfection in determining the color and flavor imparted by smoking.

Finish the sides now by dressing and rubbing the skin and flesh with pure olive oil. Smoked bacon will hang well in the smoke-house until required, provided reasonable care be taken to exclude insects and keep the smoke-house dark, dry and cool. Any degree of dampness or moisture in the atmosphere in which the bacon hangs will end in mouldy bacon.

Where it is proposed to pack the bacon or ham in order to preserve it against attacks from insects or other troubles, the flesh is rolled in bran, oatmeal, shelled oats or peameal,

## Pea Growing

Field peas are naturally adapted to the Pacific Northwest country because of the cool humid atmosphere, adequate moisture and clayey soils. This crop can be sown during fall, winter, or early spring in the Coast Section, and get the benefit of the rains during the spring months, and it is becoming a leading forage crop in the Coast section of Washington.

### Soil Adaptations.

Farmers' Bulletin 690, U. S. Department of Agriculture, states that long experience with the field pea has indicated that clay loams of limestone formation are best suited to its culture. As is the case with most other legumes, the field pea thrives best in a calcareous soil. Where the soil is not of limestone formation it is advantageous to add lime frequently. The field pea also does fairly well on sandy loam soils, but on loose, light sands the growth is usually small and the crop suffers quickly in periods of drought. Heavy, black soils rich in humus tend to produce a heavy growth of vines but comparatively few pods. One may expect a large tonnage of hay on such soils and a small seed yield.

Good drainage is essential for success with the field pea. It grows well on moist soils, but will not succeed in locations where standing water occurs or where the soil is habitually soggy.

### Varieties.

In the State of Washington the Canadian Field and the Blue Bell varieties predominate, but several other kinds are being tried out, among them the Golden Vine, Bangalia, Early Britain, French June, McKay, Kaiser and Carlton.

**Golden Vine**—The Golden Vine is a medium-early variety having a white blossom and a small, round, cream-colored seed. It has become popular in the United States on account of its uniformly good yields

wrapped in newspapers, and stowed away on shelves or in boxes.

Every effort should be made to prevent blow-flies and other pests getting access to the surface of the meat. They leave eggs on the flesh and in its numerous interstices; later on these give endless trouble. A simple means of checking their depredations is to sprinkle the surface of the meat with black pepper or a mixture containing this and cayenne pepper.

Another effective plan is to saturate clean bagging, in a creamy mixture of lime and water, and wrap the ham or bacon previously rolled in oat or peameal. Stitch the covering closely round the flesh.

of both forage and seed and the fact that it is usually easy to obtain. The small seeds also make the cost of seeding less.

**French June**—This is one of the best early varieties. It has white blossoms and is almost identical in seed characters with the Golden Vine, but it matures nearly two weeks earlier and the vine is not so large. In spite of these differences considerable confusion exists in respect to these two varieties, and the Golden Vine is often sold as French June.

**Early Britain**—The Early Britain is a very distinct variety, having medium to large brown-colored seeds which are dented on the sides, giving them a somewhat wrinkled appearance. It has colored blossoms and a rather stocky vine with large leaves. The Early Britain is about three or four days earlier in maturity than the Golden Vine and is one of the leading varieties in Canada.

**Carlton**—This field pea, which is similar to the Gray Winter, was obtained from New Zealand and has proved to be of special importance in the dry regions of Washington and Oregon.

**Bangalia**—This variety, secured from India by the United States Department of Agriculture, is fast becoming one of the leading field peas of Eastern Washington, Northern Idaho, and Western Montana, where it has made consistently good yields both with and without irrigation. It resembles the Golden Vine in size of vine, date of maturity, and shape and size of seed. The seeds, however, are greenish in color, turning brown with age. The blossoms are colored.

**Kaiser**—The Kaiser is a variety introduced from Germany by the United States Department of Agriculture. It has medium to large, deeply dented seeds, gray in color,

# Seeds

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The planting of ornamentals in the Northwest last year was fully equal to that of fruit trees. Additional thousands of rose plants, deciduous ornamental shrubs, evergreens and shade trees will ornament the farmers' door yards the coming season, for these are being selected to set out this planting season.

**Rose Plants**—Our stock is strong and choice. The hybrid perpetuals are hardy, easily grown and bloom during summer and fall. Among the popular and satisfactory varieties are: American Beauty, pink; Fisher Holmes, deep crimson; Frau Karl Druschki, large, grand white; Jacqueminot, crimson; Hugh Dickson, brilliant crimson; Margaret Dixon, white; Mrs. J. Lang, delicate pink; Ulrich Brunner, rich cherry red.

**Hybrid Teas**—These are slightly more tender than hybrid perpetuals, but are enduring considerable frosty weather when protected. They bloom freely and are very choice. Among the popular varieties are: George Dickson (gold medal 1912), velvety black crimson, very choice; J. B. Clarke, deep scarlet, choice; Joseph T. Hill, salmon pink, shaded yellow; Johnkeer, bright red salmon pink; K. A. Victoria, beautiful creamy white; Killarney, famous bright carmine pink; La France, silvery rose pink, choice; also one white; Lady Hillingdon, new deep golden yellow; Sunburst, new, choice, cadmium yellow.

FOR FULL DESCRIPTION AND COMPLETE LIST OF OUR ROSES, ORNAMENTAL SHRUBS, SEND FOR OUR CATALOG. ALSO FOR DESCRIPTIVE HINTS ON HOW TO ARRANGE THE PLANTING OF ORNAMENTALS FOR THE MOST BEAUTIFUL EFFECTS.

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Native Shrubs, Plants and Flowers, collected from the forest. Send for Circular.

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and speckled with purple. The stems also are strongly tinted with dark red. It matures with the Golden Vine or a little earlier and is a good general-purpose pea. A marked peculiarity is its ability to endure high temperatures, which should make it of special importance on the southern edge of the pea-growing district.

#### Preparation of the Seed Bed.

Most growers claim that it is advantageous to fall plow the land for the field pea, on account of the necessity for early seeding. It is usually possible to sow a week earlier when the land has been fall plowed than if it is plowed in the spring, and the opening up of the soil to the action of the frost during the winter also improves its texture. Spring plowing is satisfactory if it can be done early, and where the seed is to be broadcasted by hand it is easier to cover it properly on freshly turned land than on plowed land which has been allowed to settle during the winter. Where the ground is fall plowed it is well to work it with a disk as early as possible in the spring and smooth it down after the disk with a drag harrow in case the seed is to be planted with a drill. If one expects to sow the field peas by hand, the ground may be left slightly rough and the seed covered with a disk harrow. Finely pulverized soil is advantageous for the field pea, but not so necessary for it as for the small grains, since the seed is much larger and the small plant correspondingly stronger.

#### Seeding.

On the Pacific Coast, west of the Cascade range, as far north as British Columbia, seeding may be done any time through the late fall, and winter into early spring. Judge Brady, who raised such large crops last year, is of the opinion that Coast section farmers whose soils do not freeze will get better results by seeding in the late fall, even into the month of December, with the pea grain crop, rather than in spring. The seed should be drilled in to cover completely, but not more than about an inch deep, at that season. East of the Cascade range spring seeding is the general practice.

#### Rate of Seeding.

The rate of seeding must be varied according to the size of the seed and the abundance of the rainfall. In the eastern and more humid sections and under irrigation, small-seeded varieties like the Golden Vine should be sown at the rate of one and one-half to two bushels to the acre; for those with medium-sized seeds, two to two and one-half bushels; for the large-seeded varieties, like the Marrowfat, three to three and one-half bushels of seed are required. Under more arid conditions, the quantity of seed used should be decreased by about one-half bushel for each group. For a mixture with oats the relative proportions should be one bushel of peas to one and one-half or two bushels of oats in the humid regions, but in the dry region the relative amounts of seed should be very nearly reversed. Unless the proportion of oats in the mixture is decreased where the rainfall is light the oats, which start more quickly than the field peas, will prevent growth of the peas by robbing them of available soil moisture. Mixtures of peas with either oats, wheat or rye are valuable for forage in the

Coast section, where the rainfall is ample during the early spring months when the crops are getting the early start.

Peas grown with any of the cereal grains make good ensilage when cut in the early part of June and properly siloed, but peas grown alone are rather too rich in protein for good ensilage. As a crop by itself a considerable number of Coast section farmers find the pea profitable to grow.

#### STUMP PULLING WITH GASOLINE.

Powder and Stumping Winch Does Rapid Work.

About a year ago Mr. L. E. Olson, Napavine, one of our many regular subscribers in that locality, noticed the advertisement of the gasoline engine stumping winch offered by the Globe Iron Works, and came to Tacoma at once to investigate, with the result that he purchased a machine. A neighbor who examined the outfit when it arrived said to Mr. Olson: "You are one of the biggest fools in the country for expending your good money for this machine." Mr. Olson set to work at once pulling stumps on his own land, and took a contract to clear 20 acres of the average logged off land in that locality, for another party.

Some powder was used to shatter the stumps and not only was the land cleared in a comparatively short time, at a cost of \$20 per acre, but the machine was used to do some leveling at an additional small cost.

Early in the spring this 20-acre piece and another 5-acre tract, also cleared from stumps by Mr. Olson, was seeded to vetch and oats, and produced a crop the first season averaging three large loads per acre.

Last spring Mr. Olson was employed by the county road supervisor to pull the stumps for a certain distance preparatory for grading along the Pacific highway, at \$10 per day. When the work was completed and the bill presented, the cost proved to be so much below estimate that the supervisor had to be taken out and shown that the work was eminently satisfactory.

Mr. Olson seeing an opportunity to make some money in further contracting work, concluded to buy a machine of same make with double drum, and sold the puller used the first year at a very satisfactory price to the very neighbor who had ridiculed him for buying it.

Whether the gas engine, the horse power or hand power stump puller is used, now is a good time during the winter months to get out some stumps, then seed with vetch and one of the cereal grains in February or March, producing a feed crop for the silo to be used by good dairy cows as may be required. Capital has considerable adhesiveness towards the farmer who puts practical land clearing plans into practice, and who adopts a progressive system for dairying. Where two or more farmers can work harmoniously together, the proportionate power to attract capital is increased.

#### MARKETING AND CREDIT CONFERENCE.

National Meeting at Chicago, Nov. 29.

The Third National Conference on Marketing and Farm Credits is to be held in the Hotel Sherman, Chicago,

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

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Best commercial varieties for Pacific Coast section, choice stock in 1 to 3 years of age and good grades.

Also Plum and Prune trees of the leading marketable varieties. English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

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Pennsylvania.



Nov. 29 to Dec. 2. Provision has been made for thorough discussion of practically all phases of marketing, rural credits and the organization of agriculture. The conference is to cover four days, and the program is so arranged that all delegates will meet in general session for a part of each day and then meet in sections to discuss in detail special subjects. Bills will be drafted, to be introduced in congress at the opening of the coming session, covering rural credits, marketing, standardization of farm products and agricultural organization.

Address communications to Charles W. Holman, Secretary, National Conference on Marketing and Farm Credits, Room 903-5 Gaff Building, 230 South La Salle Street, Chicago, Ill.

### WINTER ROAD WORK.

Keep the ditches and drains open. Remove all accumulations of weeds, grass, etc., which tend to retain moisture and obstruct drainage. Furthermore, do this work early, while the ground is still dry and hard. Vegetation and litter hold water like a sponge and allow it gradually to soak in and soften the earth. The job before the road man is to keep the hard dry surface formed in the summer time from becoming softened by the fall and winter rains and snows. When the fall rains begin the earth or gravel road should be dragged frequently to prevent the formation of ruts and the collection of water.

During the winter, whenever a thaw is coming on, the cross drains and side ditches should be opened up as far as possible, so as to prevent water collecting along the roadway. If the thaw is so pronounced that the roadway is softened, the drag should be used; sometimes one-round trip of the drag, with the hitch reversed, will entirely rid the earth road of slush and melting snow and leave the road surface practically dry. Don't get the idea that the drag is not needed on your earth and gravel roads in the winter time. Instead, keep it where you can get at it readily, for if the winter is an ordinary one, you will need it many times.

### ALASKA WHEAT.

Not equal to standard varieties.

Alaska wheat, mummy wheat Egyptian wheat, Seven Headed wheat, says Professor G. R. Hyslop, crop specialist of the Oregon Agricultural College, "is a very interesting type of wheat, which has a large branching type of head and frequently some very large yields are claimed for it. When it is planted thinly over a considerable area and a good deal of space is allowed for each plant, especially on very rich land, it produces a large return when compared with the amount of seed planted, although the yield per acre is usually considerably lower than that of numerous standard varieties.

"This type of wheat which is so different from the ordinary varieties nearly always appeals to farmers who are not acquainted with it and there is a strong incentive to purchase the seed and frequently to pay a very high price for it. This variety of wheat has been tested out at the Eastern Oregon Experiment Station and at the Oregon Experiment Station at Corvallis, and in

no case has it proved to be as satisfactory a yielder or as good in quality as several other of the standard varieties. It is far better to grow Turkey Red, Forty Fold, and Little Club as winter wheat and Red Fife and Defiance as spring wheats than to grow this Seven headed variety."

### LATE SEEDING.

Some late seeding will be done this year in the Coast section, and according to last year's experience, vetch and rye or vetch and wheat can be sown up through December and a good crop cut the following June for the silo provided the soil has been put into good shape, finely pulverized.

The late plantings require more seed than when sown earlier in the fall, because there is less chance to stool. G. R. Hyslop of the Corvallis, Oregon, station, recommends for Coast conditions similar to Western Oregon, Washington and British Columbia, a seed mixture for November-December sowing as follows:

Winter wheat—8 pecks.

Winter barley—8 to 9 pecks.

Winter oats—10 pecks.

Winter rye—7 to 8 pecks.

Vetch and oats (mixed half and half by volume)—2½ to 3 bushels.

Vetch alone—80 to 100 pounds.

In this way, by getting more seed per acre and more plants per acre, there will still be a sufficient stand to make a good crop though the plants do not stool as much.

In addition to having nothing but good, heavy, clean seed, treated and free from smut and using a sufficient quantity of it to guarantee a stand, the depth of seeding should be shallow. After the rains begin and the soil cools off considerably, germination takes place much more slowly at two to three inches deep in the soil than it does at one inch. Many plants will not germinate at all three inches deep in the soil, but will give an excellent germination when planted near the surface. Therefore, all of the seeding of the various plants mentioned above should be made shallow, preferably not deeper than an inch. In this way better germination and stronger plants and a better stand may be secured.

### EXPORTS INCREASING.

The exports of breadstuffs, cottonseed oil, cattle, hogs, sheep, meat and dairy products, cotton and mineral oils from the United States to foreign countries for nine months ending September, 1915, was \$1,034,502,456, or nearly double the value of the exports for the nine months ending September, 1914, which were valued at \$616,289,563.

### MADE IN AMERICA.

There is ample room now for inventive ingenuity in this country. We have suddenly been brought to recognize the unwisdom, the folly, of shipping vast amounts of the crude material of our farms, forests, and mines 3000 miles across the ocean, and buying it back in a manufactured form, at a vastly enhanced price. We have likewise come to recognize the absurdity of allowing many natural products of the tropics, of South America, of the far East, to find their way to Europe, and of paying foreign intelligence and skill to transform them into articles of daily need in our lives.

## Plant Ornamental Trees

Many farmers are now planting increasingly of ornamental trees and flowering shrubs thus making their homes more beautiful and valuable. Their selections include Hardy Hydrangeas, one of the most attractive fall flowering shrubs, Dogwood, some varieties of which bloom both spring and fall, Japanese Quince, the earliest to flower in spring; Lilacs, Snowballs, Spirea and the various climbing plants to cover old buildings or unsightly objects about the homestead.

We can send many of these by parcel post. Write for our catalog and prices today, for full description of trees and plants.

## YAKIMA & COLUMBIA RIVER NURSERY COMPANY

North Yakima, Wash.

## PORTLAND WHOLESALE NURSERY COMPANY

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

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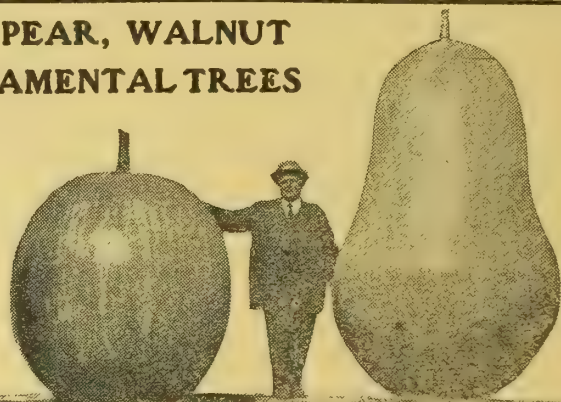
Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.

## FLOWERING BULBS CHOICE

"The Best in the West." Be sure to get copy of my catalog  
**OLAF J. WINGREN**  
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**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
*C. F. Lansing, Prop. Salem, Ore.*

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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3½ H. P. Engine.

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Send for full information and prices to



THE MAC GREGOR CO.

80 Marion St. Seattle, Wash.



American ingenuity, adaptation, inventive talent, scientific attainments, and general enterprise have promptly rallied to meet widespread demands, and establish on our own soil the permanent manufacture of a number of wares, some of minor, others of major importance. The return of peace will see them well rooted and able to withstand foreign competition.

### ASSOCIATION AMONG FARMERS.

In the course of his address on "Rural Credit and Co-operation," at the Panama Exposition, Myron T. Herrick said that if American farmers should awake to the full realization of their possibilities, they would soon be using co-operation in all their industrial, commercial and financial affairs relating to agriculture. With the splendid examples in the city before them, it is strange that they have lain dormant so long. Co-operation may, of course, be practiced through a corporation or in a partnership, but the association is its best breeding ground and nursery. In the United States, however, the purposes for which an association may be organized are limited. Business and ordinary banking have been content with the corporation and partnership. The propagandists should broaden their views and strive to make lawful for associations whatever may now be done through these other two forms of organization. Furthermore, if they wish to see rural co-operation reach its highest development, they should advocate such a modification of the anti-trust laws as would permit co-operative associations to combine.

Combination of associations is absolutely indispensable for rural co-operation. The creation of detached and isolated associations would leave the work incompletely done. There should be systems of inter-related associations; and I hope to see the day when agriculture in the United States shall be organized by local, regional, state and departmental groups bound together by unions and federations into great national systems for strengthening the purchasing and selling power of the farmers and mobilizing their resources for their financial needs. Organized in this co-operative way, the farmers would have first use of their wealth for financing themselves; their forty-five billion dollars of property and twelve billion dollars of income would be available for one another, and they would become independent of outside assistance.

The enactment of laws to enable associations to be formed for all kinds of industrial, commercial, financial and banking objects must be

procured before cooperation can be extensively used for organizing agriculture. But this is all that should be asked for. State aid would be as harmful as it is unnecessary. Artificial stimulation would weaken the vitality of any systems depending on it. In order to attain the best and most enduring results, the systems would have to be built up from within by the farmers themselves through the formation at first of the local groups. It is in the local group that cooperative credit has its freest play. The local rural cooperative banks are the basic units for creating and supporting the systems to which they belong, and they should be accorded the powers and subjected to the necessary regulations and restrictions for this purpose. A rural cooperative bank is most effective when it has the character of a neighborhood club, discards capital stock and assumes the pure associational form; for then, since it does not have to distribute dividends, its aim tends towards economy rather than gain; it can continually reduce the cost to members of its credit and other facilities, restrict its profit-takings to its absolute necessities, and use its surplus for creating the indivisible reserve that would eventually make it a substantial and permanent fixture with a large foundation in its locality. But this is not possible under existing laws for the so-called credit unions or for any other associations.

Considered from the viewpoint of agricultural organization, it will be seen that the chief purpose and value of cooperative credit is to create and support a system, so as to organize and strengthen the purchasing and selling powers of the farmers. The resources of the rural cooperative banks should be used for the collective rather than for the individual good of members, so long as there is a common need to be supplied; otherwise the spirit and practice of cooperation would both disappear together. Hence, the making of loans to members is not the primary object of a young bank and cannot be extensively undertaken until the system has been thoroughly established and a surplus accumulated in cash or credit. But this surplus frequently comes all too quickly in a cooperative bank. I venture to predict that the greatest danger to co-operatives in the United States will be the facile credit and easy money made available for them. Cooperative banking is so wonderfully potent and inherently safe that, when once it is started, enthusiasm often runs away with discretion, and a tendency arises to build too fast and lend or borrow too freely.

## IRRIGATION

Adequate, available moisture at all seasons.

### Training Efficiency for Service

What a Small Community Has Done With Students In an Irrigated District

The progressive steps taken by the Kiona-Benton public school during the last three or four years may interest some of your readers.

The original town is Kiona, a very small country village, in the lower

Yakima Valley. With the building of the O.-W. railroad, a few years ago, Benton City sprang up, about a mile northwest of Kiona. Neither village is organized or incorporated, nor is there any township or other organ-

## Bearing Size Apple Trees

We have some fine 4-year-old apple trees in Wealthy, Wagner, Grimes, Jonathan, etc., which have been frequently transplanted and will bear early when set out. Many of them have borne fruit in the nursery row.

We also have a choice selection of ornamentals including: Roses, Peonies, Delphinium, Daisies, Dahlias, Gladiolus, Tulips, Hyacinths, Lilacs, Spireas, Snowballs, Hydrangeas, Hollies, Cypress and other Evergreens.

Write for price list today.

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Larchmont Station.

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Strong healthy trees, grafted from stock with a record. We also carry the SAN JOSE MAYETTE, another big producer. Write for our price list at once.

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Plant a Walnut Grove that will grow into Dollars while you sleep. The Vrooman Franquette bears at three years and sells for 25 cents per pound—is smaller than an apple and sells for more money. Get in with the tide, and get rich. At forty feet apart, it only takes 28 trees to the acre. Is cheaper than an apple orchard to plant, and makes your land more valuable. True Vrooman Franquette Walnut Trees at Bargain Prices at

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Our success in the Alfalfa seed game has astonished the most skeptical. We were advised that clean, reliable seed could not be furnished in quantity. We found that it could be, if the dealers would go to the expense of inspecting the seed fields before they were harvested. We do this thing and therefore know what we are serving is right. If it is not right then we are to blame and are going to make it right.

We have seed for sale in quantities from 1-lb. to car lots. It is the 1915 crop—the best to be had at any price, anywhere. We have no bargains to offer you, but if you are interested to the extent that you want good seed at honest prices, we are on the job to the finish. For prices, samples, etc., wire or write,

**V. A. PETERSON ALFALFA SEED CO.**

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**THE ONLY EXCLUSIVE ALFALFA SEED DEALERS IN THE WEST**

## CHOICE ORNAMENTAL PLANTS

Flowering Shrubs of every description. Evergreens of all classes including Japanese and European selections. Choice standard Roses and newest varieties, vigorous stock. Fruit Trees at bargain prices. Send for list today.

**PUGET SOUND NURSERY & SEED CO.**

1626 4th Ave., Seattle, Wash.

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Wholesale and Retail

**Nurserymen for Four Generations; 25 Years in Present Location**

From this experience we are producing stock which afford planters the very highest measure of satisfaction; carefully grown, free from disease.

Varieties complete of **APPLES, PEARS, CHERRIES, PLUMS, PRUNES**, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

**ORNAMENTALS**—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce, Retinosporas, Cypress.

**JOHN A. STEWART & SON, Props.,**

Christopher, King Co., Wash.

**THORNLESS MAMMOTH BLACKBERRY** plants, largest blackberry grown, early and prolific bearing, hardy, fine flavor, few seeds. **J. N. REDDEN**, 901 Taylor St., San Francisco, Cal.

**WANTED**—To hear from owner of good farm for sale. Send cash price and description. **D. F. BUSH**, Minneapolis, Minn.



ization other than the school district. The school is a county school, located midway between the two towns, with five unusually competent teachers and about 100 pupils. Last May a class of four graduated from the high school, and this year opened with 23 high school pupils.

The superintendent, Prof. F. L. Audrain, is now serving his fourth year. He possesses the element of leadership, and is fully endowed with the new ideas in education, that pupils should be taught to do things, and things that will most likely stand them in good stead in after life. One of his first enterprises was to procure a Babcock tester and teach the pupils how to test the milk of cows, and for practical experience the cows of the neighborhood are tested whenever the patrons send in samples of milk. The only weak point in this work is the want of supervision over the taking of samples. Few farmers, or other people either, take correct samples, and the tests have usually shown abnormally high results. But the work of testing has been accurately done.

Next, soil studies were introduced, and each pupil had a separate plot of ground on which to grow various garden or field crops, under supervision. Cabbage, tomato and other plants are grown for sale. Then poultry and pig clubs were organized, each member procuring a start in stock of the best breeds, and the pigs were recently exhibited at an excellent fair held at the school house. These were again exhibited at the Corn and Hog Show at Prosser in the latter part of October. Then, a Boys' Corn Raising Club was started, and one boy raised this year at the rate of 95 bushels of corn per acre, which when kiln-dried weighed 79 bushels per acre.

The latest exploit was the organization of a Girls' Canning Club, of about 20 school girls. At the celebration of the completion of the government Sunnyside canal to Benton City, May 29, these girls sold candy of their own making to raise money to buy an up-to-date canning outfit, with which they began work about August 10, and between that date and the opening of school, August 30, they canned 2400 quarts of fruits and vegetables for sale commercially. They took a display of this product to the Kennewick Grape Carnival and carried off the first prize. Also, a relay of four girls took their canning outfit to the same carnival, and at the canning contest there won the honor of being the best and fastest canners that competed.

The same display and the same girls were then taken to the State Fair at North Yakima, where the display again won first honors, and the girls captured the first prize and the state championship as canners.

This is given to show what a small community can do with a competent and wide-awake leader.

W. M. SCOTT.

Kiona, Wash., October 13, 1915.

#### CHARMS OF IRRIGATED PROJECTS.

In the East and Middle West we read of drouth and flood, of hot winds and unseasonal chills, lessening the harvests and making the farmer discouraged, says C. J. Blanchard in the Reclamation Record. From the government projects comes the song of

the threshing machine and the mower. Bumper crops are everywhere. The great wheat belt of the Northwest is ready now to fill to overflowing the countless elevators and later to furnish the world with bread. The great plains have erupted so many stacks of grain and hay that the local sky line of other days has changed completely. Washington's vale of plenty, the Yakima, the Okanogan Valley, are beginning to crowd the transportation companies with wonderful crops of fruit and promise to follow later with a greater exportation. Around the big haystacks and in the broad pastures on the Klamath thousands of sleek cattle and fat hogs are being made ready for the market. The Umatilla has had a splendid year, abundantly rewarding the faith and industry of those who have conquered the blowing sand. Idaho, Gem of the Mountains, with her great projects, the Boise and Minidoka, has a new place in the sun. Unbelievable are the yields which are reported. The Shoshone, scenic wonderland of Wyoming, set apart for a chosen people, has lured a hundred new families this year from the Mississippi and Ohio Valleys, and 50,000 acres of once dusty desert have responded to the magic of irrigation in a wondrous fashion.

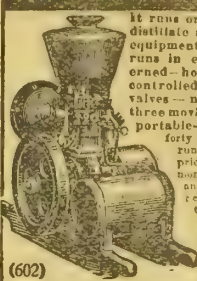
#### PROSPERITY ON THE TIETON.

The settlement and development of the Yakima-Tieton project have gone steadily forward during the past season, and those farmers whose land has been under crop for the past season or two are making a very satisfactory showing, and as crop conditions improve and if market prices maintain their proper relative value, it is but fair to assume that a prosperous condition will obtain on this project. A total of 53 new houses have been built on the project during the summer. The population has increased 300, making a total of nearly 2000 people, a large proportion of whom are native born. Many farmers have secured farm loans, thereby enabling them to make needed improvements in connection with the development of the land and also to purchase additional live stock. In this connection there have been over 250 head of valuable dairy stock brought in this season.

The development of raw lands is often brought about by an arrangement whereby the owner leases the land for a period of two or three years, the lessee agreeing to clear the land and place it under cultivation, for which he is to receive the entire returns for crops, etc., during the period of the lease.

Development of the project has been very satisfactory, but no doubt slower than might have resulted had not unfavorable market conditions and lack of capital on the part of many newcomers prevented. The farmers are able to secure farm loans on practically any improved land at the rate of from 8 to 10 per cent., enabling them to either improve their land with better buildings, fencing, etc., or to purchase more live stock, which in the past has been principally dairy cattle. The development of better markets and the securing of farm loans at a more reasonable rate of interest would do much toward the development of these lands.—G. C. Finley, Superintendent of Irrigation.

**20** Reasons Why You Should Investigate the **SANDOW** Kerosene Engine



It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices—based on enormous output—30 day money back trial—10 years iron clad guarantee. Sizes, 1 1/2 to 18 horsepower. Send a postal today for free catalog which tells how Sandow will be useful to you. No postmaster. Pocket agents' and millmen's commissions by dealing direct with factory. (602) Detroit Motor Car Supply Co. 198 Canion Ave., Detroit, Mich.

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with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignitor. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

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Highest award at San Francisco and San Diego Expositions. The gold medal gas—first in carbureting qualities, in purity, in uniformity.



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the straight refinery gasoline

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Send for our illustrated catalog and price list of roses, flowering shrubs, shade ornamentals and fruit trees. We carry a complete line and can fill your order promptly. Our fruit trees cannot be surpassed, nor the price equalled.

Order now. Fall is the best time to plant.

**ORNAMENTAL FRUIT & NURSERY CO.**  
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**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nellis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

**A. HOLADAY SCAPPOOSE, OREGON**

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**WALNUT TREES, SHADE and ORNAMENTAL TREES**

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

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## HOUSEHOLD DEPARTMENT

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## THANKSGIVING.

Now Sing we a song for the harvest,  
Thanksgiving and honor and praise,  
For all that the bountiful Giver  
Hath given to gladden our days.

For grasses of lowland and upland,  
For fruits of the vine and the field,  
For gold, which the mine and the  
prairie,  
To deliver and husbandman yield.

But now we sing deeper and higher  
Of harvests the eye cannot see,  
They ripen on mountains of Duty,  
Are reaped by the brave and the  
free.

And these shall be gathered and  
garnered,  
Some golden with honor and gain,  
And some, as with hearts' blood are  
ruddy—  
The harvests of Sorrow and Pain.

Oh, Thou, who are Lord of the  
harvest,  
The Giver who gladdens our days,  
Our hearts are forever repeating  
Thanksgiving and honor and praise.

EVER ANALYZE YOUR  
TROUBLES?

Have you ever taken the trouble to analyze your troubles—or, more properly, perhaps—the cause of them? asks the St. Joseph News-Press. As a rule, people don't. They come to regard trouble and themselves as a good deal like Daniel Webster's idea of liberty and union—one and inseparable. And they go through life accordingly.

There is everything to justify the belief that nature intends a certain amount of struggle and disappointment for everyone. The commonplace experiences of life prove that neither wealth nor rank afford immunity. But the notion that there can be no divorce from trouble is wrong 99 times out of the 100. Usually the worst of one's troubles are of one's own making—or, at any rate, of one's own permitting. The man defies the laws of nature or common sense, or both, and pays the penalty. Or he sits supinely by while adversity ties him up, with the exception of his tongue; this he works overtime, telling of his misfortunes. The overruling Power is beneficent. Man is

meant to be healthy, prosperous and happy. But in the sweat of his brow he must make not only his living, but his life.

## FALL PLANTING OF ROSES.

It is a pity that not more people in the Pacific Northwest who have a love for roses and perennial flowers realize the great importance of planting them in the fall months, instead of waiting until spring.

A fall planted rose or perennial will develop and bloom almost twice as well as one planted in the spring, for the reason that it will establish itself during the fall and winter rains, make roots, and when spring comes, the plant is well established in its new home and with lots of new root growth is all ready to grow, and delight its owner with dozens upon dozens of beautiful perfect blossoms.

I should particularly recommend the fall planting of roses in all locations west of the Cascade Mountains, but not before the last of November. In the Middle West or East in October. If planted too early in the fall a growth of bush will result and the first frost will seriously damage the bush. All the winter protection needed would be a few inches of strawy manure put around the plants. If you would set roses out in the spring do it not later than March or April at the latest; this refers to field-grown roses, which are the only plants worth while. Their strong constitution insures a robust growth and certain success. Hot-house stock cannot be set out until the weather is well settled and they often result in much disappointment and discouragement, owing to their weak constitution.

Tender tea roses, such as Lady Hillingdon, The Bride, Bridesmaid, the Cochetts, etc., may be set out in the spring in severe climates, but the long list of hardy hybrid perpetuals will come through any winter with very little protection. We of the Pacific Coast are, of course, particularly fortunate in our climate. All the protection my roses receive is a shovel full of manure around the stem after the first breeze. On my tender tea roses I scatter a few handfuls of straw over the plant and between the branches. People who have not much aptitude or time to devote to the growing of roses, should not undertake to grow tender tea roses anyway, for while they are very beautiful they certainly require more care and attention.

The hybrid teas are a class of recent creation embodying the delicate shades and peculiar fragrance possessed by the tea roses, and have almost the vigor of the hybrid perpetuals, and are hardy in all but the most rigorous climates. Mad. Caroline Testout, one of the most beautiful pink roses, belongs to this class; it is probably the most popular rose on the Pacific Coast.

The one beautiful class that cannot be too highly recommended are the hybrid perpetuals; they are hardy in any climate and blossom early and late, and comprise all the superb rich crimson, red and pink varieties.

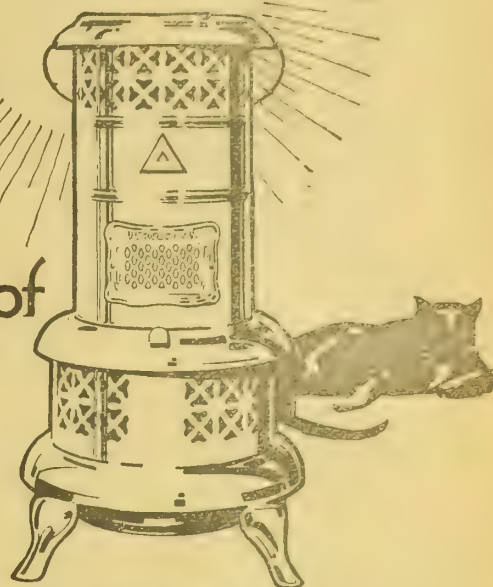


## Olympic Pancake Flour

Self-rising, nutritious; has a taste that makes every member of the family its friend, and it digests easily for all. Four-pound cartons.

The Puget Sound Flouring Mills Co., Tacoma, Wash.

The  
warmth of  
summer  
sun



## Perfection Oil Heater

Makes the house warm and cozy on the cold, damp days. Inexpensive to operate—easily carried from room to room. Smokeless and odorless. Dealers everywhere. For best results use Pearl Oil.

## Standard Oil Company

(California)  
Tacoma

Sunshine Lamp  
300 Candle Power FREE

To Try in Your Own Home  
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

## COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.  
SUNSHINE SAFETY LAMP CO.  
605 Factory Bldg., Kansas City, Mo.



Hybrid pereptuals grow and flourish wherever roses grow, in any soil, in any climate; they ask no favors and seek no special privileges. The blossoms appear soon after planting and continue until the approach of winter forces them to sleep. The best known in this class are Frau Karl Druschki, probably the most beautiful white rose grown; it is also known as the Snow Queen; then the old favorite, General Jacqueminot, a sweet scented, bright crimson rose. The Hugh Dickson, a crimson-scarlet production; a rose so satisfactory and beautiful as to be made Tacoma's official rose. Ulrich Brunner, with full globular blossoms of a lively, pleasing light red, and of a shade distinctly its own; it is very prolific and constant in blooming.

O. M. PUDOR.  
Puyallup, Wash.

**HEYWOOD MATTRESS**  
\$12 \$15 \$18

At Best Dealers  
Everywhere  
HEYWOOD MATTRESS FACTORY

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Better Be Sure  
Than Lucky

Use the modern accurate formula,—

**CRESCENT**

**Raises the Dough**

Chemists and Authorities state that Crescent is pure and wholesome. Sold by Grocers

FULL  
POUND **25c**

CRESCENT MFG. COMPANY. SEATTLE





## STEWING MEATS.

By Miss Mary Sutherland, Home Economics Dept., State College, Pullman, Wash.

Cuts which may be used are usually selected from beef, lamb, mutton or veal; such as the plate, naval, neck, shoulder, lower part of the round skirt steak, aitchbone, etc. Stewing is a method of preparing meat by extracting juice to flavor gravy, and retaining the juice in the remainder by searing the meat. Wipe the meat and cut into suitable pieces for serving. Meanwhile divide into two portions, add one portion to cold water and heat to the boiling point. Set the other portion by browning in a little fat in a frying pan. Then add it to the water and meat. The whole should be cooked slowly for three hours, or until the meat is tender. Meat with some bone and fat makes a richer stew than one made with lean meat. Onions, turnips, carrots, parsnips and potatoes are the vegetables commonly used in stews. The vegetables should be cut into half-inch cubes or quarter-inch slices and added the last hour of cooking. The potatoes should, however, be par-boiled five minutes, then added to the stew, allowing twenty minutes for the cooking. Sweet herbs, parsley, a bit of bay leaf, one or two cloves, celery salt, or catsup may be added to give variety. Salt and pepper are the usual seasonings. A nice way is to cook the vegetables separately.

### Place of Meat in the Diet.

Authorities seem to agree in the estimate that in the United States about one-third of the total expenditure for food materials is for meat. They also agree that when the total expenditure is one-sixth for meat the dietary will be more economical and also better balanced.

### NUTRITIVE VALUE OF SKIM MILK.

Since the nutritive part of skim milk consists very largely of protein, it is to be classed, as whole milk is, with such food materials as eggs, meat, fish, poultry and cheese (though it is much more delicate than those foods) rather than with such substances as sugar, which serve only as fuel. Two and a half quarts of skim milk contain almost as much protein and yield about the same amount of energy as a pound or round of beef. When skim milk sells for 4 cents a quart, or about 2 cents a pound, and round beef for 20 cents a pound, a dime or any other sum of money spent for skim milk will provide nearly twice as much nourishment as it will if spent for round steak.

### WINTER GARDEN PROTECTION.

Such flowers as peonies and hollyhocks will come up again the following year if they are properly protected during the winter, while others like cannas and dahlias, which are more accustomed to warm climes, must have their roots or bulbs dug up and stored in a cellar. The Department's specialists give the following suggestions for "putting the garden to bed."

#### Hardy Perennials.

Cover hardy perennials, such as peonies, larkspur, hollyhocks, columines, iris, platycodons, and perennial poppies, with a good coating of

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

manure or other litter to a depth of 3 or 4 inches. In light frost localities this will hold the frost in the ground and keep the plant from alternately freezing and thawing; in more northern regions the manure will protect the plant from freezing to a depth that will cut off its water supply.

#### Cannas and Dahlias.

As soon as the tops of cannas, dahlias, gladiolus, caladiums and similar plants are killed by frost, dig up the roots or bulbs and store them in a cellar where the temperature will remain at 55 degrees, and should never go below 50 or above 60 degrees. Do not shake any more earth from the clumps of cannas and dahlias than is necessary in removing them from the ground. Place the plants on racks or in slat boxes so the air may circulate freely through them. No frost must reach the roots nor must they become too warm or dry.

#### Hydrangeas.

Hydrangeas (semi-hebeaceous) in the Coast section will last through the winter out-of-doors, if properly cared for. The tops should be protected with straw or brush. This may be held in place about the bushes with a little manure or stones. The flower buds of the hydrangea form in the fall, and this cover will keep them from winter killing while shielding the bush from winds and sun.

#### Roses.

Teas and hybrid teas should be protected in the Coast section, while in the interior it is also well to protect the hybrid perennials.

Cut the tops to within 30 inches of the ground. Cover the roots with coarse manure or leaves or similar litter. Hold this in place by evergreen boughs which also acts as a protection. Brush from deciduous trees or shrubs may be substituted for the evergreen boughs except in the most extremely cold regions.

Mounds of earth about six or eight inches in height should be drawn about the base of the rose bushes to keep them from mice. As an added protection against mice, permit the ground to freeze slightly before winter protection is supplied. In fact, roses should not be protected until after the first light freeze.

### TARTAR SAUCE.

One-half cup white sugar, one-fourth cup mayonnaise, one small slice onion, one-half tablespoon capers, one-half tablespoon pickles, one-half tablespoon olives, one-half tablespoon parsley, all chopped very fine; teaspoon vinegar.

To white sauce add remaining ingredients, stir constantly until thoroughly heated, but do not let it boil. A little left over tomatoes, strained, or tomato soup, adds a nice flavor. It is especially good where all the chopped ingredients do not happen to be on hand. Served with steamed, boiled or fried fish.

MRS. D. C. PATTON.

### CHILDREN WANTING HOMES.

At the Washington Children's Home Society, Ravenna Heights, Seattle, a long line of little boys are waiting for the opportunity to make good. They are homeless lads, ranging in age from five to twelve. Many do not know of a relative in the world, others remember a home before

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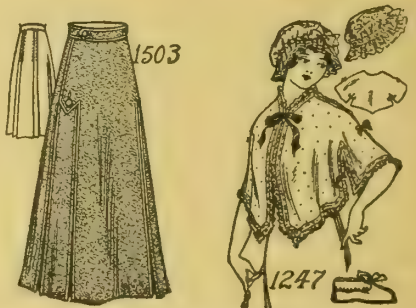
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## GARMENT PATTERNS

Order by number. See description below.



**1504—Ladies' Combination Camisole & Envelope Skirt & Drawers.** Cut in three sizes: small, medium and large. It requires 3½ yards of 36-inch material for a medium size. Price 10c.

**1507—Ladies' Dress.** Cut in 6 sizes—34, 36, 38, 40, 42 and 44 inches bust measure. It requires 7½ yards of 36-inch material for a 36-inch size. The skirt measures about 3½ yards at the foot. Price 10c.

**1526—Ladies' Waist, with Body Lining.** Cut in 6 sizes—34, 36, 38, 40, 42 and 44 inches bust measure. It requires 1½ yards of lining and 3½ yards of material 27 inches wide for a 36-inch size. Price 10c.

**1525—Girls Dress.** Cut in 4 sizes—4, 6, 8 and 10 years. It requires 3½ yards of 36-inch material for an 8-year-old size. Price 10c.

**1532—Junior Dress.** Cut in 3 sizes—12, 14 and 16 years. It requires 5½ yards of 36-inch material for a 14-year-old size. Price 10c.

**1502—Ladies' "Over All" Apron.** Cut in 3 sizes—small, medium and large. It requires 4½ yards of 36-inch material for a medium size. Price 10c.

**1503—Ladies' Skirt with Plaited Insert.** Cut in 6 sizes—22, 24, 26, 28, 30 and 32 inches waist measure. It requires 3½ yards of 54-inch material for a 24-inch size. Price 10c.

**1247—Ladies' Dressing Sack, Boudoir Cap and Slipper.** Cut in 3 sizes—small, medium and large. It requires ½ yard for the cap, 1 yard for the slippers, and 2½ yards for the sack, of 27-inch material for a medium size. Price 10c.

**NORTHWEST HORTICULTURIST & DAIRYMAN**  
Box 1604, Tacoma, Wash.



mother died, or before father left and never returned. "Am I going to a home soon?" "Will you get a home for me this week?" "Can I go on a farm?" are some of the questions the boys ask the placing out workers who visit the Home from time to time.

Homes are wanted where the boys will be treated as sons, not as slaves, where they will have church and school privileges, and where they will be given a start in life. Full particulars may be had by addressing the state superintendent, 19-20 Lippy Building, Seattle.

#### TAMALES.

Meat from  $\frac{1}{2}$  boiled chicken. 1 teaspoon salt. 1 clove garlic or  $\frac{1}{2}$  medium onion; 1 cup corn meal;  $\frac{1}{4}$  teaspoon cayenne; 2 or 3 small red peppers; Corn husks.

Chop the chicken; season with the

cayenne pepper, garlic, or the onion finely chopped, and salt; form the meat into little rolls about 2 inches long and three-fourth inch in diameter. Pour boiling water over the meal and stir; use water enough to make a thick paste. Take a heaping tablespoon of the paste, pat it out flat, and wrap a roll of chicken in it; then wrap each roll, as made, in corn husks which have been softened by immersion in hot water, tying the husks with a piece of string close to each end of the roll. Trim off the ends of the corn husks, allowing them to project an inch or two beyond the rolls. Cover the rolls with the broth in which the chicken was cooked, or with boiling salted water. Add two or three small, sharp, red peppers, and boil for 15 minutes.

Tamales are usually made with chicken, but other meat may be used if desired.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.

Conserve Dairy Energy and figure on the Individual Cow.

### YELM DAIRY HERDS IMPROVING.

Miller Bros. Company Places Valuable Holstein Sire.

Dairymen at Yelm, Washington, have realized for some time the need of improving their dairy herds, and as readers of this paper, they have had in mind the purchase of sires from high record ancestry, realizing from the experience of others in this state that the introduction of good sires, together with ordinary skill in management and care, would soon develop cows which produce more butter fat and milk than the value of their feed, and from which owners can realize some satisfactory measure of profit.

Through the Miller Bros. Company, Tacoma, the well known creamery firm, Mr. George Goodrich, Yelm, was fortunate to get the registered Holstein sire, Stevens Sir Vale, raised on the Twin Lakes Farm. This sire has some of the highest producing ancestry known, and is one of the best bulls of his class on the coast. His sire is Sir Concordia Wild Rose De Kol, who combines in the closest degree the blood of Homestead, Jr., De Kol, and Piebe De Kol Burke, two wonderful transmitting sires. His dam, a 23 lb. cow, is a grand daughter of Sadie Vale Concordia, (30.64 lbs.) and Mercedes Julips Pietertje, (29.36 lbs.) both former world's champions. The record of six of his nearest dams and grand dams average 29.72 lbs. The dam of Stevens Sir Vale carries 62½ per cent. of the blood of the first 29 lb. cow, the first 30 lb. cow, and the first 34 lb. cow. He can hardly fail to be worth several times his cost to Mr. Goodrich, while the neighbors will also benefit from this selection.

### AYRSHIRES GROWING IN POPULARITY.

Willowmoor Herd Takes \$4800 in Prizes.

Mr. J. W. Clise, proprietor of the Willowmoor Farms, at Redmond, has demonstrated to the world that the Ayrshire breed is taking its place

well up in the front rank for profitable dairy work and very suitable to Pacific Coast conditions.

At the great Panama-Pacific Exposition, this herd made practically a clean sweep, winning 30 out of 32 firsts, championships, group prizes, etc. Mr. Clise was the largest individual prize winner at the fair and the herd created quite a sensation. The grand total in prizes won was about \$4800.

Dairymen are beginning to realize the fact that the Ayrshire is a most economical producer of milk, butter or meat for the food consumed. This breed is becoming known as the dairy rustler, thriving and paying a profit on the least natural food supply. She feeds readily on any fodder given, but does not hesitate to go after the smallest pickings even during inclement weather.

While strictly a dairy cow, she fattens quickly when dry and is so heavy in loin and hind quarters as to be a favorite with butchers.

Mr. Clise sold 16 head of his show cattle, being more he had intended when fixing prices which it was not anticipated would be attractive to buyers. After returning he received applications from California buyers for carload lots.

Following are the Ayrshire awards: Ayrshire Awards at Panama-Pacific Exposition.

Bull, 3 years and over—Clise, first; Domes, second and third; McFarland, fourth.

Bull, 2 years and under 3—Clise, first and second; College, third; Domes, fourth.

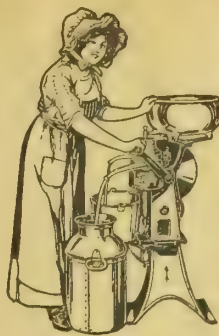
Bull, 1 year and under 2—Clise, first; Domes, second and fourth; McFarland, third.

Bull Calf, 6 months and under 12—Domes, first; McFarland, second, third and seventh; College, fourth; Clise, fifth, sixth and eighth.

Bull Calf, under 6 months—Clise, first; McFarland, second; Domes, third, fourth and fifth; Clise, sixth.

Cow, 5 years and over—Clise, first, second, third, fourth and fifth; Domes, sixth, seventh and eighth.

Cow, 4 years and under 5—Clise,



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Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

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Dropped April 9th, 1915, solid light fawn, and large for age. Sired by son of Eminent. One half sister gave over 8,000 lbs. milk with first calf, another 9494 lbs. with second calf. Price \$50.

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## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

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FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease Ellensburg, Wash.

### DAIRY CATTLE WANTED

Those having high grade young cows rich in blood of any of the leading dairy breeds (Jersey or Guernsey breeding preferred) to sell, will please give age, milking quality and price.

Have you pure bred Guernsey or Jersey sires of good form and breeding to offer at bargain prices, then please give particulars.

### Pierce County Rural Development Co.

Geo. B. Woodbridge, Mgr.  
923 A St., Tacoma, Wash.

### DAILY MARKET REPORTS

To furnish daily market service, we have arranged a club rate with the Daily Produce News, published at Seattle. The regular price is 50 cents a month or \$5 a year, but we send this daily one year and the Northwest Horticulturist & Dairyman three years for \$5, or the daily 3 months and this paper one year for \$2.

N. W. Horticulturist & Dairyman  
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FARM LANDS—In Central Washington, improved and unimproved. Particulars on application. References. H. B. CARROLL, Ellensburg, Wash.



first, second, third and fourth; Domes, fifth; McFarland, sixth.

Cow, 3 years and under 4—Clise, first, second and third; College, fourth; Domes, fifth; McFarland, sixth.

Heifers, 2 years and under 3 — Clise, first, second, third and fourth; Domes, fifth, seventh and eighth; McFarland, sixth.

Heifers, 18 months and under 2 years—Clise, first, second, third and fourth; McFarland, fifth and sixth.

Heifers, 1 year and under 18 months — Clise, first, second and fourth; Domes, third; College, fifth; McFarland, sixth and seventh.

Heifer Calf, 6 months—Clise, first second and sixth; College, third; Domes, fourth and seventh; McFarland, fifth.

Heifer Calf, under 6 months — Domes, first and eighth; Clise, second, third and sixth; College, fourth; McFarland, fifth and seventh.

Cows, having official record, 5 years and over—Clise, first, second and third.

Cows, having official record, 5 years and under—Clise, first, second, third, fourth and sixth; College, fifth.

Graded Herd—Clise, first and second; Domes, third and fourth; McFarland, fifth.

Young Herd—Clise, first; McFarland, second; Domes, third.

Calf Herd—Clise, first; McFarland, second; Domes, third; College, fourth.

Produce One Dam — Clise, first, second and sixth; Domes, third, seventh and eighth; McFarland, fourth and fifth.

Get of One Sire—Clise, first, second, third and fourth; McFarland, fifth; Domes, sixth; College, seventh.

Advance Registry Cow—Clise, first and second; College, third.

Dairy Herd—Clise, first and second; Domes, third.

Ayrshire Champions Won by Mr. Clise

Cows—Mature Class—Senior Champion on "Queen"; Reserve Champion on "Lily of Willowmoor." Heifer Class—Junior Champion on "Woodbine B-2"; Reserve Champion on "Finlayson-Cherry." Grand Champion Cow, "Queen."

Bulls—Aged Class—Senior Champion on "Peter Pan"; Reserve Champion on "Robin Hood 31." Junior Class—Junior Champion on "Robin Hood 26"; Reserve Champion on "Robin Hood 18." Grand Champion Bull, "Peter Pan."

### WINNINGS BY CARNATION STOCK FARM.

Holsteins Awarded 32 Prizes at P. P. Exposition.

A very encouraging feature in connection with the winning of 32 prizes at the International Stock Show at San Francisco by the Carnation Stock Farm, near Tolt, Washington, is the fact that practically all the young prize winning stock was raised on their own farm in the Snoqualmie Valley. This is evidence that the methods used by the Carnation Stock Farm in breeding and feeding is productive of the very best in the raising of Holsteins. This verification of correct methods as attested by this world's show is a source of great satisfaction to E. A. Stuart, president of the Carnation Stock Farms, and also president of the Pacific Coast Condensed Milk Company, whose exhibit and manufacturing plant at the exposition will be remembered by

the thousands of visitors. Mr. Stuart's efforts have served both to widen a market for the products of the dairy farms and to set a pace for the breeding of the quality of dairy cattle, which affords some satisfactory margin of profit to their intelligent owners, the patrons of condensers and creameries.

Following is a list of Carnation Stock Farm Holstein-Friesian Cattle, winners at Panama-Pacific International Exposition.

Ollie Johanna Sir Fayne.  
Riverview Gerben Hengerveld.  
Dutchland Governor Sir Colantha.  
Prince Rag Apple Canary.  
Brightview Alban Segis 4th.  
Governor Hengerveld Colantha.  
Ollie Johanna Sir Fayne 6th.  
Jolie Tille Denver.  
Josie Vederzaan.  
Lottie Canary Segis.  
Lady Violet Fayne.  
Cascade Lizzie.  
Tsussie Rose 2nd.  
Cascade Violet.  
Belle Mooie of Twin Lakes Farm.  
Leda Hartog De Kol 2nd.  
Cantate Domina Sir Skylark 3rd.  
Edna De Kol Sir Skylark 2nd.  
Iowanna Colantha Constance 2nd.  
Colantha Lark De Kol.  
Leda Hartog Ormsby 3rd.  
Clothilde Homestead Ollie 2nd.  
Parthenia Mechthilde Ormsby 4th.  
Ollie Johanna Sir Fayne.  
Riverview Gerben Hengerveld.  
Governor Hengerveld Colantha.  
Produce of Cascade Violet Cornucopia:  
Cascade Lizzie.  
Lady Violet Fayne.  
Get of Dutchland Governor Sir Colantha:  
Winifred Hengerveld De Kol 2nd.  
Cantate Domina Sir Skylark 3rd.

### GUERNSEY AWARDS FOR CHICONA.

A. L. Gile, of Chinook, Shows Skillful Breeding.

The winnings in Guernseys of Mr. A. L. Gile, proprietor of Chicona Farm, Chinook, Pacific County, Washington, at the Panama-Pacific Exposition, was most excellent. There were six good herds of this breed in competition, and as a class of the strongest ever exhibited. Following is a list of the prizes awarded this herd:

Junior Champion Heifer—Veda of Chicona; Reserve Junior Champion Heifer—Polly of Chicona. First prize on get of sire, won on the get of King of Medfield, the herd sire of Chicona Farm. The youngsters winning this prize included Yeoman's King, the 1st prize 2-yr.-old, and reserve senior champion; Polly of Chicona, reserve junior champion heifer; Veda of Chicona, Jr., champion heifer and Chicona Bill Rose, 2nd prize senior bull calf.

First prize on exhibitors herd, won with Bill Rose.

Polly, Rosamund, Veda and Joseph's Pride, all of Chicona.

First prize on calf herd.

Second prize on Senior bull calf, won by C. Bill Rose.

Second and 4th prizes on Jr. bull calves.

Fifth prize on aged cow, won by Lady of Chilmark's 2nd.

Fourth prize on four-year-old cow, won by May Rose of Haddon.

Third prize on three-year-old cow on Lucelia of Chicona.



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

### SKYKOMISH VALLEY HERD

#### HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

## Holstein Home Herd

Watch for our offering of cows to be sold at the Cascade International Stock Show. Here is your chance for high grade cows and heifers, bred to our \$10,000 bull, Sir Bessie Fobes Tritomia. One young bull for sale whose sire's dam averaged over 1000 pounds of butter a year as a three, four and five-year-old.

Write for full records and prices on such stock as you desire.

**E. B. MARKS**

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## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

**E. R. BRADY**  
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## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

**Miller Bros. Company**

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### VALLEY VIEW DAIRY FARM

Won more first prizes than any other exhibitors at the Washington State Fair, including Grand Champion bull.

Won first prize in 48 hour production contest, both on 3-year-old and on 2-year-old heifer.

Thirty head of this class of females will be sold by myself at the Cascade International Stock Show, North Yakima, Friday, November 26.

For particulars, description and price, write,

H. C. DAVIS,

Granger, Wash.

## GLENDALE CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

**GLENDALE CREAMERY CO.,**

D. S. Troy, Manager.

Chimacum, Wash.

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

**CRESCENT HILL FARMS**

Walter J. Domes, Prop.

McCoy, Oregon.



Fifth prize on two-year-old, Algona of Chicona.

First and 4th on Junior yearling, 1st and 2nd on Senior heifer calves, 3rd and 4th on Junior heifer calves.

Guernsey cow having official yearly record begun at 5 years or over 2nd on Lady Chelmark, 3rd on Hazel's Girl of Chicona.

Guernsey cow having official yearly record under 5 years, Lucella 3rd, Algona 4th.

Guernsey graded herd, 2nd prize.

Produce of dam, 4th.

A. R. Guernsey cow with two of her progeny, 2nd and 3rd.

Aged bull, 4th, King of Medfield.

The 1st and 2nd awards on Senior calf class shows skillful breeding at Chicona Farm, and is evidence of solid foundation for great future records of this herd, for there were 17 animals exhibited in this class and the two winners were bred in the herd owned by Mr. Gile.

### THREE MILKINGS A DAY.

#### Box Stalls for Good Producers.

On the Greenbank Farm, Manager Richards adheres strictly to the rule of keeping a well-balanced food supply before good producing cows; in other words, "Never let the cow get empty." Three milkings a day is the practice for by experience it has been determined here that with good feeding and three times milking, 25 per cent. more milk can be obtained from a cow than with ordinary care and two milkings.

It has been proven beyond question that the three-times-a-day plan stimulates the milk organs to a greater activity and as a consequence it creates in heifers and young cows the habit of persistent milking, a characteristic which adds very materially to the value of the animal in question. Cows on this farm have been made to produce twice as much the second lactation period after arriving here as they did the first.

He prefers box stalls to stanchions and is of the opinion that cows of a high producing capacity will make the extra expense and care involved pay well. Here are some of the records developed at Greenbank in support of this plan:

Nancy Poch, kept in a box stall, went under test September 15, 1914. The first calendar month she produced 2068.8 pounds of milk. She closed her semi-official yearly record September 15, 1915, with a showing of over fifty pounds of milk per day. Together with this record she is due to freshen November 8. Netherland Pansy Sholton 2d Lass, who was placed on semi-official test August 15, 1914, gave in September, 1860.8 pounds of milk, while in July of 1915, or eleven months after calving, she gave 1616.2 pounds of milk. This cow closed her yearly test August 14, 1915, and freshened again September 24, 1915. One two-year-old heifer produced 478.38 pounds of fat in a year and carried a calf seven and one-half months of the time. The cow which is going to make the lowest yearly record in the herd has to her credit at the end of 289 days 465.67 pounds of fat. These figures show quite conclusively that every cow in the herd is making her owner a fair profit. This being true, the system must have some economic value. Further the cows seemingly are in a much better physical condition at the

end of two years of the above treatment than they were at the beginning.

### DAIRY PRODUCTS EXPORTED

Cheese, Butter and Butter Fats in American Export Trade, 1915.

Cheese, butter, and other butter fats are again becoming important factors in our export trade after a long period of comparative inactivity. Fifteen or twenty years ago the United States was selling abroad between 20 million and 30 million pounds of butter, from 50 million to 80 million pounds of cheese, and from 5 million to 10 million pounds of imitation butter annually. In later years, however, exports of this class decreased in a marked degree and in the fiscal year 1914 had fallen far below the quantities named. In the year just ended there was a distinct revival in all these lines, with totals closely approximating the high levels touched in the decade from 1890 to 1900.

The large gains made by domestic dairy products and butter substitutes are well illustrated by figures published by the Bureau of Foreign and Domestic Commerce, Department of Commerce, in the June "Summary of Foreign Commerce." Butter, usually averaging about 3½ million pounds annually in our export trade, in 1915 went to nearly 10 million pounds. During this period imports of butter were reduced by more than one-half, falling from a little less than 8 million pounds in 1914 to less than 4 million pounds last year.

American cheese, running at about 2½ million pounds a year, went to 54 million pounds in the fiscal year 1915. Here also, as in the case of butter, the trade balance was transferred to the export side, for the year's imports of cheese last year only totaled 50 million pounds, a decrease of 13¾ million pounds from the total for 1914.

Exports of condensed milk, usually exported in sums valued at between 1 million and 2 million dollars annually, in 1915 rose to 3 million dollars in value, the quantity (37 million pounds) being double that of 1914.

Imitation butter contains in addition to oleomargarine oil some butter fat. The exports of this article also doubled, rising from 2½ million lbs. in 1914 to 5¼ million pounds last year.

England has become our largest foreign market for butter, cheese, and condensed milk, having taken three and one-third million pounds of butter, out of a total export of 10 million pounds; 48½ million pounds of cheese, out of a total export of 54 million pounds; and 4 million pounds of condensed milk, out of a total export of 37 million pounds. Canada, Cuba, Panama, Australia, and Venezuela also take considerable quantities of American butter; Panama and the West Indies are important markets for our cheese; while Cuba, Belgium, the Netherlands, China, Japan, Russia, Chosen, Panama, Hongkong, and Brazil take large amounts of American condensed milk.

These exports, while important, represent a very small proportion of the annual products of the 60 million cattle on American farms, valued at more than two and one-third billion dollars. As long ago as 1909, the latest period covered by the national

## CHICONA FARM GUERNSEYS

At the Panama-Pacific Exposition we won first prize on Get of Sire of King of Medfield, the sire of Yeoman's King, Reserve Senior Champion bull, Polly of Chicona, Reserve Junior Champion Cow, Veda of Chicona, Junior Champion Cow and of Chicona Bill Rose, second prize senior bull calf and the head of the first prize Young Herd and of the first prize Calf



King of Medfield, 15434

Herd. No other bull shown sired one champion. King of Medfield stands out pre-eminent as the greatest Guernsey sire in the West.

King of Medfield is sired by the great bull, Imp. King of the May, considered by many to be the greatest bull of the breed. At the National Dairy Show at Chicago last year, Langwater Farms took first on Get of King of the May. King of the May is sire of 17 daughters whose average production is 677 pounds of butter a year. The dam of King of Medfield is Imp. Hayes Rosie 3rd, a half sister to Yeoman, sire of the Peerless Dolly Dimple and the Grand Champion Bull at the National Dairy Show in 1912.

We are offering some excellent bull calves, sired by King of Medfield and out of Advanced Registry cows, for sale at very reasonable prices.

See our winnings at the Panama-Pacific Cattle Show, the greatest cattle show ever held on the Coast, in the news columns of this paper.

**ALBION L. GILE Prop.**

**CHICONA FARM HERD**

**CHINOOK, WASH.**

## DAIRYMEN

We can supply your wants, complete with articles of any description which can be carried by Parcel Post to full barn and milk house equipment. Positive satisfaction assured on all goods we handle and we ship very promptly. We are filling orders for vetches and grass seeds for late sowing.

Gasoline Engines for every farm purpose.

**Poole's Seed and Implement Co.**

1507 Pacific Ave.

Tacoma, Wash.

## DAIRYMEN WANTED

Fine opening for good dairymen who have a few cows or some cash. Good opportunity for the 20-cow unit dairyman on a co-operative basis. For particulars address W. H. Kaufman, Bellingham, Wash.

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312. Our 2-year-old Nena Cornucopia produced in 30 days 733.3 lbs. milk and 5.037 lbs. butter.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Peer Banks and Duke of Mary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,  
CHIMACUM,  
WASH.**

Kindly mention this paper



margarine on which internal revenue tax was paid in 1914 aggregated 142 million pounds.

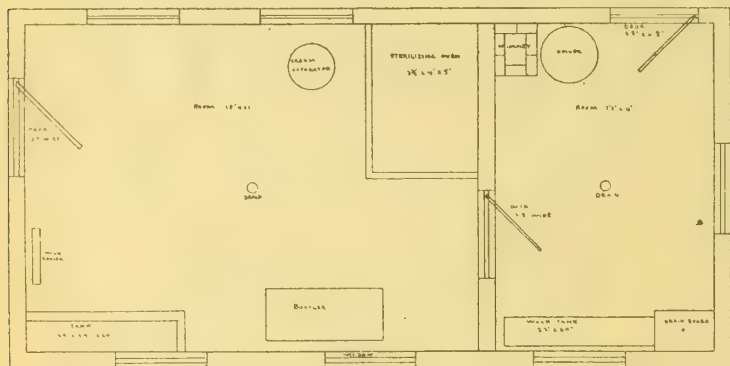
the building, setting windows and door frames, which should have 6-inch jambs. Then put on upper joists 2x4x12, 16 inches on center, and after this put up rafters 2 feet apart, and then the roof.

The inside of the front room can then be sheeted as far as the studding is single. The concrete floor can then be laid, making this 2½ inches thick of same mixture as was used for the foundation, finishing with ½ inch composed of 4 parts of fine stone or sand, and 1 part of Portland cement trowelled smooth. After this put up form 4 feet high all around room. This will allow for an amount of concrete equal in thickness to the studding used. Fill this with a mixture of 4 parts of fine sand and 1 part of Portland cement.

The balance of the sides of the

To construct a milk house lay out the foundation, then dig trench twelve inches wide and about twelve inches deep, and put up forms six inches above ground so that the foundation will be 12x12x18 inches. Then fill the trench and form with concrete, using five parts coarse crushed stone, two parts fine crushed stone or sand, and one part of Portland cement. When this has thoroughly hardened place four-inch tile inside of walls to suit drainage as per floor plan, and then fill up inside of walls with either clay or cinders—preferably cinders, and tamp thoroughly.

To put up frame, first put on a sill



Floor Plan of Milk House, Showing Location of Equipment.

around wall of 2x4 edgewise, also cross sill 16 feet from front of building, allowing sills to come seven-eighths inch from the outside of the wall, and then double across to rear end, and eight feet on each side. After this take 14-foot studding, cut from same, one piece 8 feet  $8\frac{1}{2}$  inches long, and one piece 44 feet  $7\frac{3}{4}$  inches, spiking the short piece onto the long one. This will require 32 pieces, and will constitute the studding for the front room. The rear room will require 22 pieces cut 8 feet  $8\frac{1}{2}$  inches. Put these in place, and then put on a double plate all around, using for the same 6 pieces 2x4x16, and 6 pieces 2x4x12. After this side up

front room can then be entirely sheeted, after which the room should be lathed, placing lath on the sides perpendicularly, and allowing them to lap over the cement a few inches in an irregular manner. This room can now be plastered, using two parts of sand and one part of Portland cement for the lower section, and a good hard wall plaster for the balance of the room. The boiler room should be ceiled all over. The doors and windows can now be cased in, and the room is ready for the fixtures. These specifications are based on the supposition that studding will be sized  $1\frac{3}{4} \times 3\frac{3}{4}$ , and all lumber dressed to seven-eighths inch.



Ayrshire cow Lily of Willowmoor, 5-year champion of the breed for milk and butter fat. J. W. Clise, Seattle, owner.

Pullman, Wash.

## NEWPORT, WASH.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

Moxee City, Wash.

**J. M. SHIPLEY, Proprietor.**  
Haller Bldg Seattle

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1

Lynden, Wash.

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock.

Also Registered Ayreshire Bull Calves at reasonable prices.

F. I. MEAD,  
524 California Bldg.  
TACOMA, WASH.

is popular among dairy-  
men who appreciate that  
that

richness and fine flavor of products lead to larger profits.

is a sure way to increase your profits. Grade up your Herd by using a pure bred Guernsey Bull and you will be surprised at the results.

Send for free literature.

## Guernsey Cattle Club

Box 20, Peterboro, N. H.

cows, Wisconsin bred; most of them fresh this fall; 25 head yearling and 2-year-old grade Guernsey and Jersey heifers; will not sell individuals from either lot. Several pure bred Guernsey bull calves.

**C. G. HENKEL,**  
Opportunity, Wash.

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

In our recent shipment from the east are 2 very choice young bull, descendants from Gov. of Chene breeding which we offer,—a rare opportunity for high record and very choice stock. After inspecting many herds our selection was made from a noted importer of Guernseys.

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

**AUGUSTINE & KYER,**  
First St., Seattle, Wash.

# Guernseys

(Dr. Park Weed Willis, owner)  
Herd sire carries best blood of  
Guernsey breed including Glen-  
wood Boy of Haddon and Governor  
of the Chene. His dam has a rec-  
ord of over 700 lbs. butter in one  
year.

A very few choice bull calves  
for sale. Address

ORCHARD HILL FARM  
Redmond, Wash.

Registered bulls and cows for sale.  
Good producers. Write for records  
and prices.

A. BENSON  
Lynden, Wash.



## Northwestern Association of Holstein-Friesian Breeders

Temporary Organization Formed at Seattle.

Following the successful showing of the Holstein-Friesian breed of dairy cattle at the Live Stock Show at the Panama-Pacific International Exposition held in October, 1915, Mr. Frederick L. Houghton, Secretary of the Holstein-Friesian Assn. of America, and Mr. Albert W. Ellis, Advertising Manager of the same Association, visited the Pacific Northwest in the hope of organizing a Northwest Association.

Their efforts were successful when more than twenty breeders of Holstein cattle met at a banquet held at the Arctic Club, in Seattle on November 3rd. The meeting was presided over by Mr. E. A. Stuart, president of the Carnation Stock Farms. Mr. Stuart is very much interested in organizing into an association the breeders of the Holstein-Friesian cattle, known among farmers as the "Black and Whites," because he is interested in developing this great Northwest into the foremost dairying section of the country. In his introductory speech he claimed the climate is more favorable in the Northwest and Puget Sound district than any place he knows of in the United States. In this section they do not experience the severe cold and hot spells as they do in the east and middle west, which naturally has a tendency to decrease the production of milk. Mild climate, pure water and green grass the year round have much to do with helping the cow to give quantity and quality milk.

Many dairymen have become well fixed financially because they took advantage of this market afforded by the evaporated milk condenseries, of which there are a large number in the Northwest. Others, however, are making a mere living because they did not have the right kind of producing cows on their dairy farms—that is, cows which produce more milk in a year's time than they cost for their feed and housing.

The main point at issue of this preliminary organization of the breeders was discussed extensively, and all agreed that it was necessary to supply the dairymen with good, healthy stock. With a reasonable amount of care, there is no reason why the Northwest Pacific breeders should not have the healthiest cows in any part of the country, on account of the favorable climate. Much discussion was held on the subject of thoroughly testing all cattle shipped into the Northwest from other States, so they would be absolutely sure that the incoming animals would be free from tuberculosis. Definite action on this will probably be taken when the Association is formed permanently, and as a part of the National Association.

Both Mr. Houghton and Mr. Ellis were much impressed with the stock and the stock farms they saw and the men they met. Mr. Houghton stated that he admired the western men for the way they handled everything they did in a big, broad way, showing that they were enterprising and progressive. He particularly admired the goodfellowship shown on the Coast, which often times it is found lacking among Eastern busi-

ness men. Mr. Houghton spoke of a number of breeders of Holsteins in the Northwest going East to buy pure bred or foundation stock and stated that the Eastern men will be coming to the West to buy World's record stock. He invited the breeders to attend the National Association convention, to be held in Detroit, June 1915.

Mr. David Munroe, one of the well known Holstein breeders of Spokane said that a number of wheat farmers in Eastern Washington were buying dairy stock and they were particularly interested in getting purebreds.

Mr. Fred Stimson of Seattle, a breeder of pure bred Holsteins, was a very enthusiastic speaker at this meeting. He claimed that it was the duty of the breeders in this section of the country to take the situation in hand and endeavor to eliminate the shipping in from other states of unhealthy cattle. Men who are making a profession of this business are duty bound to build up a reputation for themselves and the Northwest by handling only healthy stock.

Mr. Wm. Bishop, one of the best posted cattle breeders in the United States, is enthused over the possibilities of the Holstein cow in the Northwest. His herd has won many prizes, not only for quantity milk as well as butter fat. He is convinced that the Holstein breed will break more world's records for butter fat, because the Holstein cow is generally known to be the greatest milk producer of any kind.

Mr. George Gue, of North Yakima, known as the "Holstein Orator," made a most impressive speech on straightforwardness and honest dealing in, buying and selling cattle. He was very much enthused over the key-note of this meeting—the populating of the Northwest dairy sections with healthy, pure bred Holsteins.

Mr. A. W. Ellis, who handles all of the advertising of the Holstein Association, told of his experiences in writing booklets, etc., in the interest of milk from Holsteins. They have special booklets for the consumers, for doctors and for dairymen. He stated that the Holstein is the economic cow:

First—Because milk from Holsteins is a well balanced ration for human beings.

Second—On account of the quantity of milk.

Third—On account of the size of the animal.

These are reasons that the famous dairying sections of Holland chose Holsteins.

Until further plans are made for a Northwest Association of Holstein-Friesian breeders, the following temporary officers were filled: President, E. A. Stuart; secretary, F. S. Stimson.

Among the breeders who attended this meeting, stimulated by and given in honor of the National Secretary, Mr. Frederick L. Houghton, and Advertising Manager, Mr. A. W. Ellis, were R. L. Rutter and David Munroe, of Spokane; H. C. Davis, E. B. Marks, Geo. A. Gue, Wm. Todd, of North Yakima; J. R. Hurlburt, Wm. Bishop, B. S. Fryar, Mr. Philips, J. von Herberg, F. S. Stimson, Mr. Swalwell, Mr. Burnam, A. H. Buck, Herman Steffin, A. E. Smith, Hugh Nesbit, Mr. Yarr, H. G. Stibbs and E. A. Stuart.

A Herd of 300 Registered Ayrshire Cattle Holding More

## WORLD'S RECORDS

than any other Ayrshire Herd.

## Willowmoor Ayrshires

### The champion herd at the Panama-Pacific International Exposition

The Ayrshire in official and competitive tests has proved herself to be a most economical producer of milk and butter, yielding the largest possible amount for the food consumed, and at the least possible cost.

The Ayrshire is the Dairy Rustler, thriving and paying a profit on the least natural food supply, because she is a vigorous feeder, not at all dainty in her appetite, eating with a relish everything that comes in her way in the line of forage; good grass, poor grass or browse, all is food for the Ayrshire cow.

While the Ayrshire is strictly a dairy cow, she fattens so quickly when dry, and is so heavy in hind quarters and loin that she is a favorite with butchers.

This herd of three hundred head of registered Ayrshires holds first place as producers and in the show ring.

Peter Pan, one of our herd bulls, was Grand Champion at the Royal Agricultural Show, Great Britain, before imported, at the National Dairy Show, Chicago, at the Panama-Pacific International Exposition, San Francisco, and wherever shown on the Pacific Coast. Production records of his daughters place him at the head of producing Ayrshire bulls.

Stock sold on production records of dams; all tests 365 days. Of eight world's records made by all Ayrshire breeders in America since 1900, this herd has made three.

Catalogue and prices upon application.

## J. W. CLISE

WILLOWMOOR FARMS  
Redmond, Wash., Near Seattle

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

## A. J. C. C. JERSEYS

Big Producers

Fine heifers and young bulls of the highest breeding for sale.  
Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)

## Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## LAKESIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

P. A. FRAKES

Scappoose, Oregon

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman



### SYSTEM IN DAIRYING.

Every successful dairyman who is realizing some satisfactory measure of profit adheres to some system which includes the following rules of practice.

"Use pure-bred dairy sires from cows having large and profitable productions of milk and butter fat.

"Raise well the heifer calves from cows which for one or more generations have made large and profitable productions of milk and butter fat.

"Breed heifers at the age of sixteen to twenty months.

"Feed heifers liberally and milk regularly.

#### In Summer Time.

"Do not try to save feed by turning to pasture too early.

"Provide plenty of pure, fresh water, shade and protection against flies during hot weather.

"Supplement poor pastures with corn silage or green soiling crops, like rye, peas, oats, green fodder, cabbage and other available feed.

#### In Winter Time.

"Feed cows daily one pound of grain for every three pounds of milk produced, twenty-five to forty pounds of silage, or its equivalent and what clover or alfalfa they will eat.

"Do not turn cows out to remain and suffer in cold, stormy weather.

"Allow them to have water which is not colder than that from a deep well, twice or three times daily.

"Brush cows daily if you can possibly find the time, for it pays better than does grooming of horses, which, as a rule, is not neglected.

"Keep cows in clean, well-lighted, properly ventilated stables.

#### At All Times.

"Treat cows gently and avoid excitement.

"Weigh the milk of each cow at milking time.

"Get your neighbors to share with you in owning a Babcock milk tester and test the milk of each cow.

"Discard the cow which has failed at the end of the year to pay market

price for all the feed she has consumed.

"Give cows six to eight weeks' rest between lactation periods.

"Belong to a dairy cattle breeders' association, a cow-testing association and every organization that will help to keep you posted and in touch with the best up-to-date methods of managing your dairy herd."

### FAT BASIS FOR CHEESE AND MILK.

After considerable experimentation the Tillamook Creamery Association has ascertained that in buying milk for cheese making the fat basis is more nearly correct than the weight basis, but a more correct system for figuring on both the fat and casein content seems to be necessary than is now generally the practice. Will cheese makers at Satsop and in other localities please explain their methods of arriving at a correct solution of the milk buying problem for cheesemaking?

## Holsteins of Pontiac and Hengerveld Dekol Breeding



The upward trend of the dairy markets on account of large exports from this country has caused a stronger demand for high producing dairy cattle, and prospects are for rising prices on desirable stock. Those intending to buy will do well to arrange for their purchases as soon as possible. No dairyman can afford to use bulls of low or unknown records. We have some very valuable young sires to sell.

We can also spare a few more cows whose records and prices may be obtained on application. Several of our young cows have given 60 to 80 pounds milk with first calf. Ten head of our herd are half sisters to world record cows.

There is a growing demand for dairy stock. Buyers are particular about quality. It is a good time to get started right, while the butter market is becoming quite satisfactory.

We are in position to guarantee satisfaction. Please write for further particulars and mention this paper.

**A. E. SMITH CO., White Bldg. Seattle or Sumas, Wash.**

## Dairy Supplies

Cream Separators, Milk Bottles, Bottle Carriers, Dairy Cans and Pans, Strainers, Brushes, Wyandotte Washing Powder—everything for the Dairy.

**TACOMA IMPLEMENT CO.**  
1521 Pacific Ave. Tacoma, Wash.

### AND HERE'S ANOTHER

Oct. 4th, 1915.  
Albers Bros. Milling Co.,  
Seattle, Wn.

Gentlemen:

Enclosed find two dollars and fifty cents (\$2.50), for which please send us by parcel post, 1 50-lb. sack of your Calf Meal. If this is not enough to cover cost and postage please forward and we will remit the difference, as we have two fine calves and must have **ALBERS CALF MEAL**. We have tried several other kinds and none gave as good results.

Yours truly,  
Edwin Dow.  
Malott, Wn.

We are receiving these letters from different parts of this state and now believe the dairymen are beginning to realize the real value of **ALBERS CALF MEAL**. There is nothing harmful in **ALBERS CALF MEAL**. It can be fed with absolute safety. Surely you cannot afford to feed your calves whole milk, when you can buy a perfect substitute in **ALBERS CALF MEAL**. The price is right. Ask your dealer.

## Albers Calf Meal



## Albers Bros. Milling Co.

SEATTLE  
TACOMA

LOS ANGELES

PORTLAND  
SAN FRANCISCO

Main 3552

W. W. PERKINS, Mgr.

### NORTHWEST CREAMERY SUPPLY COMPANY

We Have a Complete Line of

### CREAMERY PACKAGE MFG. CO.'S

Creamery, Cheese Factory, Dairy Machinery and Supplies.

Everything Required by Dairymen.

306 Second Avenue South

SEATTLE

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

### PACIFIC COLD STORAGE CO.

N. P. Wharf, Tacoma, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

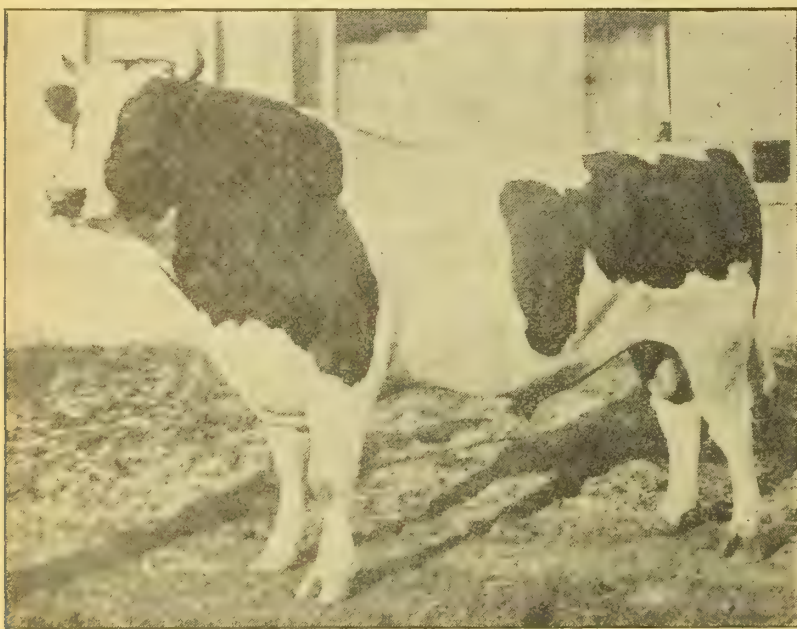
**J. H. Taylor**

Montesano, Wash.

## BLACK LEG

### LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. **THE CUTTER LABORATORY, Berkeley, California.**



Ollie Johanna Sir Fayne 59096, the herd sire of the Carnation Stock Farms, is now recognized as one of the fineset sires on the Pacific Coast. Though only six years old, he already has seven A. R. O. daughters to his credit, one as a three-year-old making very close to 21 lbs., and the others crowding that mark.

He is a great show animal, having taken second prize at the National Dairy Show at Chicago during 1913,

and winning a number of first prizes at some of the leading state and inter-state fairs during that year. At the recent Panama-Pacific Exposition he won third.

This young bull is from a 31-lb. cow, and is sired by Sir Johanna Fayne, a son of Sir Fayne Concordia, who is a half brother to the former world's champion cow, Grace Fayne 2d's Homestead, with a record of 35.55 lbs. butter.



**HOLSTEIN WINNINGS P.-P. EXPOSITION.**

The Holstein awards were placed in the following order by W. H. Standish, of Lyons, Ohio:

Bulls 3 years and over: Hazelwood Ormsby Posch, shown by John L. Smith; Hazelwood Sir Ormsby, by Smith; Ollie Johanna Sir Fayne, by Carnation Stock Farms; Dutchland Governor Sir Colantha, by Carnation Stock Farms; North Star Korndyke Sir Beets, by Wm. Bishop.

Bulls 2 years and under 3: Mutual Lad T., shown by Smith; Sir Chima-cum Wayne, by Bishop; Panama Pacific Pontiac Frakes, by Laura J. Frakes and Bros.; Panama-Pacific Pontiac Cheif, by Frakes.

Bulls 1 year and under 2: Hazelwood Band Master, shown by Smith; Hazelwood Segis, by Smith; River-view Gerben Hengerveld, by Carna-tion Stock Farms; Prince Rag Ap-ple Canary, by Carnation Stock Farms; Campus Pontiac Dude, by Ore-gon Agricultural College.

Bull calves 6 months and under 12: Sir Fayne Dot Cornucopia, shown by Bishop; Hazelwood Mercedes Ormsby, by Smith; California La Palko Prince, by University of California; California Prex (twin), by University of Cali-fornia; one entry, Smith.

Bull calves under 6 months: Sir Chimacum Wayne Pontiac, shown by Bishop; Governor Hengerveld Colantha, by Carnation Stock Farms; Hazelwood Ormsby Korndyke, by Smith; Sir Chimacum Wayne Cornu-copia, by Bishop.

Cows 5 years and over: Bonnie Ormsby Lass, shown by Bishop; Bracelet Alta Posch, by Smith; Hazel-wood Cinderella Butter Girl, by Smith; De Kol Alban Posch, by Smith; Josie Veederzaam, by Carna-tion Stock Farms.

Cows 4 years and under 5: Hazel-wood Aagie Hartog, shown by Smith; Loo Belle, by Oregon Agr. College; Lady Violet Fayne, by Carnation Stock Farms; Hazelwood Mercedes Butter Girl, by Smith.

Cows 3 years and under 4: Cas-cade Marie, shown by Bishop; Hazel-wood Ormsby Posch, by Bishop; Cas-cade Lizzie, by Carnation Stock Farms; Nana Kaan Sela, by Bishop; Hazelwood Clothilde Ormsby De Kol, by Smith.

Heifers 2 years and under 3: Hazel-wood Bracelet Pauline, shown by Smith; Hazelwood Alban Ormsby, by Smith; Nena Newman Cornucopia, by Bishop; Hazelwood Ormsby Mech-thilde, by Smith.

Heifers 18 months and under 2 years: Riverview Chloe Mechthilde, shown by Bishop; Belle Mooie of Twin Lakes Farm, by Carnation Stock Farms; Leda Hartog De Kol 2nd, by Carnation Stock Farms; Hazelwood Heilo Ormsby, by Smith; Jessie of Hazelwood, by Smith.

Heifers 1 year and under 18 months: Winifred Hengerveld De Kol 2nd, shown by Carnation Stock Farms; Chimacum Veeman Pontiac, by Bishop; Oakie Doo Doo 2nd, by Smith; Bonnie Orms-by Lass II, by Bishop; Cantate Do-mina Sir Skylark III, by Carnation Stock Farms.

Heifers 6 months and under 12: Iowana Colantha Constant, shown by Carnation Stock Farms; Forward Clementine Bessie 3rd, by Carnation Stock Farms; Hazelwood Homestead Bracelet, by Smith; Colantha Larky De Kol, by Carnation Stock Farms;

**GREENBANK'S CANARY PONTIAC****Born January 7, 1915**

Another son of King Korndyke Pietertje Pontiac, and from a cow with a 7-day record of 29.12 lbs. but-ter, that has given since this calf was born more than 15,000 lbs. of milk and 700 lbs. of butter. Bulls such as this produce cows that make money for thier owners. Write us for pedi-gree and price.

**Greenbank Farm****Greenbank, Wash.,****or****814 Leary Bldg., Seattle, Wash.****Breeders of Heavy Producing Holsteins**

Hazelwood Bracelet Alitta Posch, by Smith.

Heifers under 6 months: Entry, shown by Carnation Stock Farms; Chimacum Wayne Gettie, by Bishop; Bonnie Ormsby Lass 3rd, by Bishop; Hazelwood Ormsby Korndyke De Kol, by Smith; Chimacum Wayne Jennie, by Bishop.

Cow with official yearly record be-gun before 5 years of age: Loo Belle, shown by Oregon Agr. College.

Graded herd: 1st, shown by Bishop; 2nd, by Smith; 3rd, by Carnation Stock Farms.

Breeders young herd: 1st, shown by Carnation Stock Farms; 2nd, Smith; 3rd by Bishop.

Calf herd: 1st, shown by Carna-tion Stock Farms; 2nd, by Smith; 3rd, by Bishop.

Produce of dam: 1st, shown by Univ. of California; 2nd, by Bishop; 3rd, by Carnation Stock Farms; 4th, by Smith.

Get of sire: 1st, shown by Carna-tion Stock Farms; 2nd, by Bishop; 3rd, by Bishop; 4th and 5th, by Smith.

Dairy herd: Bishop; Smith; Carna-tion Stock Farms; Smith.

Senior Champion Bull: Hazelwood Ormsby Posch, shown by Smith.

Reserve Champion Bull: Hazel-wood Sir Ormsby, shown by Smith.

Junior Champion Bull: Sir Fayne Dot Cornucopia, shown by Bishop.

Reserve Junior Champion Bull: Governor Hengerveld Colantha, shown by Carnation Stock Farms.

Grand Champion Bull: Hazelwood Ormsby Posch, shown by Smith.

Reserve Grand Champion Bull: Hazelwood Sir Ormsby, shown by Smith.

Senior Champion Cow: Bonnie Ormsby Lass, shown by Bishop.

Reserve Senior Champion Cow: Aaggie Nena Cornucopia, shown by Bishop.

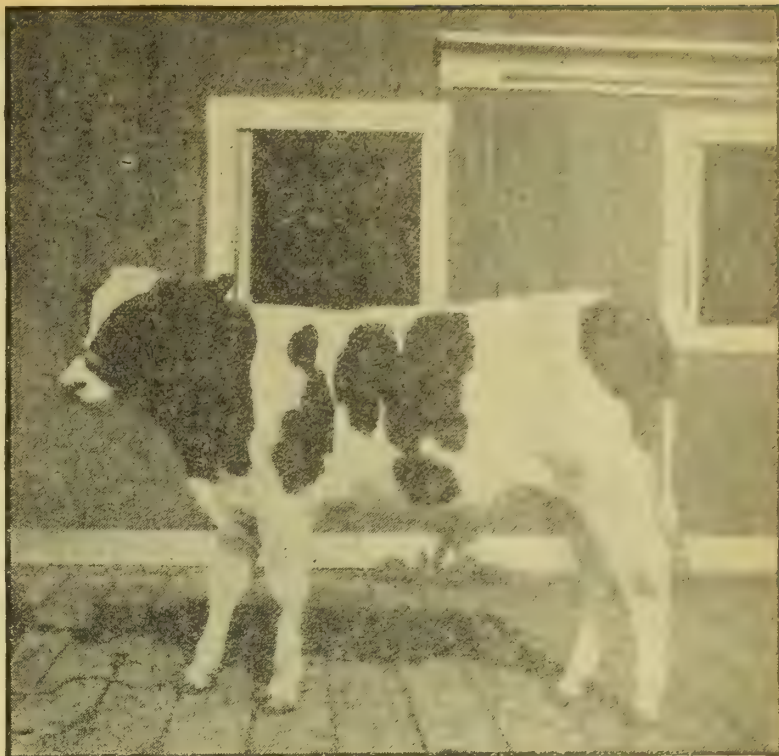
Junior Champion Cow: Riverview Chloe Mechthilde, shown by Bishop.

Reserve Junior Champion Cow: En-try shown by Carnation Stock Farms.

Grand Champion Cow: Bonnie Ormsby Lass, shown by Bishop.

**JERSEYS AT P.-P. EXPO-SITION.**

Jerseys were well represented at the great Panama-Pacific show.

**The James Sanitary Barn Equipment**

**In use in the EXPOSITION DAIRY BARN is now offered for sale for delivery after December 4th**

This Equipment consists of:

**James Hoist Feed Cars.**

**James Hoist Litter Carriers.**

**James Hoist Milk Can Car-riers.**

**James Three-Wheel Feed Trucks.**

**James Sanitary Calf Pens. Bull Pens, Cow Pens.**

**Several Hundred Feet I-Beam Track and Hangers and over 300 James Sani-tary Steel Stalls with Gal-vanized Steel Mangers or Manger Divisions.**



Cow Comfort

**JAMES SANITARY BARN EQUIPMENT**

Received at P. P. I. E.

**The Grand Prize**

the highest possible award.

If you contemplate building a new dairy barn or remodeling the old one, send for the "JAMES WAY," Catalog B, and let us help you plan your barn so as to get the greatest convenience and the most for the money.

**THE DE LAVAL LINE**

De Laval Cream Separators, De Laval Milk Clarifiers, Alpha Gasoline and Distillate Engines, Alpha Combination Power Spray Outfits, the Ideal Green Feed Silo, James Sanitary Barn Equipment, Refrigerating Plants, Irrigation and Pumping Plant Equipment, Viking Rotary Pumps, Centrifugal Pumps, etc.

EVERYTHING FOR THE DAIRYMAN

**DE LAVAL DAIRY SUPPLY CO.**

SAN FRANCISCO.

Write for Catalog.

SEATTLE

The California exhibitors were Guy H. Miller, Modesto; The N. H. Locke Company, Lockeford; B. D. McGehee, Modesto; S. P. Kelly, Ferndale, and S. F. Williams, Chico. The herds from Oregon were represented by H. West, Scappoose; C. P. Hembree, Monmouth; Clifford F. Reid, Port-land; Ed. Carey, Lafayette; F. Laugherty; F. S. Lynn, Perrydale. Washington herds were represented by E. L. Brewer, Satsop and Guy C. Chapman, Pomona.

The herds from Oregon and Wash-ington won the bulk of the prizes, in-cluding championships.

Thomas Dempsey, of Westerville, Ohio, placed the awards in the follow-ing order:

Jersey graded herd: 1st, West; 2nd, Hembree; 3rd, Miller; 4th, Locke.

Breeders' young herd: 1st, West; 2nd, Hembree; 3rd, Loughary; 4th, Locke; 5th, Kelly.

Calf herd: 1st, West; 2nd, Locke.

Produce of dam: 1st, West; 2nd, West; 3rd, Miller; 4th, Locke; 5th, West.

Get of one sire: 1st, West; 2nd, Lynn; 3rd, West; 4th, Hembree; 5th, Locke.

Advanced registry cow shown with 2 of her progeny, owned by exhibitor: 1st, Miller; 2nd, Kelly; 3rd, Hem-bree; 4th, Brewer; 5th, Kelly.

Dairy herd: 1st, Miller; 2nd, Locke, 3rd, West.

Senior Champion Bull: Golden Fern's Noble Jr., shown by Hewitt.

Reserve Senior Champion Bull: Al-tama Interest, by Miller.

Junior Champion bull: Fancy's Ralieg, shown by West.



Brilliant Spray, by Hembree; Bosnian's Dimpled Princess, by Hembree; Jewel of Venadera, by Miller.

### GUERNSEY WINNERS AT P.-P. EXPOSITION.

The Guernsey classes were judged by Chas. L. Hill, of Rosendale, Wisconsin, the awards of exhibits over 6 months being placed in the following order:

Bulls 3 years old or over: Imp. Itchen May King, shown by Walter Dupee; Same Simpson, by D. H. Looney; May King of Fern Ridge, by C. W. Main; King of Mayfield, by Albion L. Gile; Don Adonis of Linda Vista, by Humphrey.

Bulls 2 years and under 3: Yeoman's King, by L. H. Albertson; President's Mysie, by L. D. Smith.

Bulls 1 year and under 3: Fernmain's Iowa Boy of the Oaks, shown by Looney; Auricles Cherub of Edgemoor, by Dupee; Mayhews True-type, by Humphrey; Donald of Mayhews, by Humphrey.

Cows 5 years or over: Imp. Itchen Wood Sorrel, shown by Dupee; Imp. Itchen Moss Rose, by Dupee; Imp. Raymond's Queen of School Lane Farm, by Saylor; Imp. Julia's Maid of Beaulieu, by Saylor; Lady Chilmark II, by Gile.

Cows 4 years and under 5: Imp. Mildred II of Les Godaines, shown by Dupee; Ysobel Prince, by Looney; Berkshire Lassie, by Humphrey; May Rose of Haddon, by Gile; Golden Maid of Maple Lane, by Humphrey.

Cows 3 years and under 4: Florham Dame, shown by Dupee; Fairy of Alfalfa Farms, by Humphrey; Lucilla of Chicon, by Gile; Mary Dance of Riverside Farm, by Dupee; Calista, by Looney.

Cows 2 years and under 3: Marguerite of Pinehurst II, shown by Dupee; Imp. Donnington Goldie V, by Dupee; Honey Bunch, by Looney; Walburga, by Humphrey; Algona of Chicon, by Gile.

Heifers 18 months and under 2 years: Imp. Hayes Princess Mary, shown by Dupee; Henrietta of Mayhews, by Humphrey; Imp. Fancy of Vivier II, by Dupee; Saylor's Pansy Sequel, by Saylor; Bessie B., by Looney.

Heifers 1 year and under 18 months: Polly of Chicon, shown by Gile; Evelyn of Edgemoor, by Dupee; Violet's Corona's Lass, by Annie S. Lathrop; Rosamond of Chicon, by Gile; Caprice of Edgemoor, by Dupee.

#### Cows and Herds.

Cows with official yearly record begun at 5 years or over: Imp. Itchen Moss Rose, shown by Dupee; Hazel's Girl of Chicon, by Gile; Lady Chilmark II, by Gile.

Guernsey graded herd: 1st, Dupee; 2nd, Gile; 3rd, Looney; 4th, Saylor; 5th, Humphrey.

Guernsey young herd: 1st, Gile; 2nd, Looney; 3rd, Saylor; 4th, Lathrop.

Guernsey calf herd: 1st, Gile; 2nd, Dupee; 3rd, Looney.

Produce of dam: Produce of Caprice of Haddon, shown by Dupee; 2nd, Looney; 3rd, Looney; 4th, Gile; 5th, University of California.

Get of Sire: 1st, Gile; 2nd, Looney; 3rd, Saylor; 4th, Looney; 5th, Gile.

Advanced Registry cow: 1st, Imp. Itchen Wood Sorrel, shown by Dupee; Hazel's Girl of Chicon, by Gile; Algoma of Haddon, by Gile.



Jersey sire Onota's Cotillion Boy, first and grand champion in age class, Oregon State Fair, and a prize winner at the P.-P. Exposition. Owned by Clifford F. Reid, Portland, Oregon.

Reserve Junior Champion Bull: Onoto's Prince of S. B., shown by West.

Grand Champion Bull: Fancy's Ralieg, shown by West.

Reserve Grand Champion Bull: Golden Fern's Noble Jr., shown by Hewitt.

Senior Champion Cow: Nashville Susie, shown by Lynn.

Reserve Senior Champion Cow: Imp. Jolly Berna, shown by West.

Junior Champion Cow: Cotillon's Sunny Maid, shown by West.

Reserve Junior Champion Cow: Cowslip's Financial Maid, shown by Reid.

Grand Champion Cow: Nashville Susie, shown by Lynn.

Reserve Grand Champion Cow: Cotillon's Sunny Maid, shown by West.

Some of the individuals were:

Bulls, 3 years old or over: Golden Fern's Noble Jr., shown by G. G. Hewitt; Altama Interest, by G. Miller; Onoto's Cotillion Boy, by Clifford Reid; Octavia's Duke, by Frank Loughary; Maid's Jersey Duke, by G. H. Dammeier.

Bulls 2 years and under 3: Noble Emporer, shown by Loughary; Undulatta Prince, by Hembree; Fussys Fern Noble, by H. West; Bonnie's Thelma Lad of U. V., by S. P. Kelly.

Bulls 1 year and under 2: Fancy's Ralieg, shown by West; Combination's Premier, by West; Roxy's Rochette's Noble, by Hembree; Rochette's Noble Duke, by Hembree; Financial King of L. by N. H. Locke Co.

Cows 5 years or over: Imp. Jolly Berna, shown by West; Imp. Brilliant Spray, by Hembree; Glorious Juanette, by Hembree; Moehicans' Thirty-eight, by Brewer; Maid of Counsel Crest, by Dammeier.

Cows 4 years and under 5: Imp. Great Prince, by West; Valet's Golden Biddy of L., by Lockford; Bosnians' Dimple Princess, by Hembree; Figgis of V. C., by Kelly.

Cows 3 years and under 4: Nashville Susie, by F. E. Lynn; Valet's Dairymaid of L., by Locke; Jewel of Venadera, by Miller; Jolly's Nioba, by Dammeier; Sir Oxford's Brilliant Spray, by Hembree.

Cows 2 years and under 3: St. Maives Beauty, shown by Ed. Carey; Valet's Golden Lemola of L., by Locke; Lissa Success, by E. L. Brewer; Alsatia of S. B., by West; La Vallettes Violet of L., by Locke.

Cow with official yearly record begun after 5 years of age: Pearl of Venadera, shown by Miller; Moehican's 38, by Brewer; Lorna of Venadera, by Miller; Wanda of Venadera, by Miller.

Cow with official yearly record begun under 5 years of age: Nashville Susie, shown by Lynn; Imp.



## LARROWE'S DRIED BEET PULP

It is no longer necessary to buy high priced mill feeds for your dairy cows. A ration composed solely of ALFALFA AND LARROWE'S DRIED BEET PULP furnishes just the right proportions of protein and carbohydrates, together with sufficient bulk and an abundance of succulence. Dairy cows will do their best on this ration and yield 1 to 5 lbs. more milk per cow a day shortly after putting them on it.

A. W. Morris & Sons (breeders of the world's champion cow—Tilly Alcartra) say "Larrowe's Dried Beet Pulp increases the milk flow, strengthens and improves the physical condition of the cow."

McAllister & Son (well known and very successful Holstein-Friesian breeders) feed alfalfa and Larrowe's Dried Beet Pulp exclusively and say that they "know of no grain its equal and couldn't get along without dried beet pulp."

Thousands of feeders will tell you of the splendid results they are getting from this healthful, succulent vegetable feed. It is excellent for fattening; also for horses, hogs, sheep, etc.



—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened. It is put up in convenient 100-lb. bags and may be had either plain or with molasses.



GO TO YOUR FEED DEALER TODAY and order a single 100 lb. sack of either the plain or molasses dried beet pulp. Ask for Larrowe's. Test it on one cow whose milk record you know—and watch results.

**FREE!** Our Booklet "Profitable Feeding,"—containing valuable information on feeds and feeding. Should be in the hands of every dairyman. Write for a copy—today.

**THE LARROWE MILLING CO.**  
939 Central Building  
Los Angeles

## FISH MEAL

Protein 55%; bone phosphate 20%; fat or sweet oil 10%; moisture 7%; fiber 1% in **BEST, PUREST AND CHEAPEST FORM.**

**BUY SALMEL BRAND** and make your own mixed ration for **POULTRY, SHEEP, HOGS, CATTLE**. Ask your dealer for Salmel Fish Meal or write for prices, etc., to

### SPOKANE GRAIN CO.

4958 8th Ave. South, Seattle, Wash.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

**HIGHLAND FARM,**  
Box 56 Underwood, Wash.

### GOOD REGISTERED BERKSHIRES —

Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.

### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**  
Route 1 Everson, Wash.

### For Sale

**Duroc Hogs**

Choice pure bred breeding sows and young pigs. Large frame, fast growing and easy keepers. Prices right and satisfaction guaranteed.

**H. A. SIMONDS**  
Bothell, Wash.

## GOATS

Westfold Farm thoroughbred registered Angoras. Choice stock at low prices. Also high grade Toggenburg milch goats from noted thoroughbred buck "Planchon" A. M. G. R. 497. Address

**DAVID WHITCOMB,**  
Arcade Building, Seattle



Get your harness dealer to dip your harness occasionally in Eureka Harness Oil. Costs little and is quickly done. But it will save you many a dollar.

## EUREKA HARNESS OIL

adds years to the life of your harness; and good harness costs money. It's poor economy to leave it at the mercy of sweat, dust, moisture and heat—leather's worst enemies. If you prefer, you can apply Eureka yourself by hand. Dealers everywhere sell it.

**Standard Oil Company**  
(California)  
Tacoma



Dairy herd: 1st, Dupee; 2nd, Looney; 3rd, Saylor; 4th, Humphrey; 5th, Gile.

Senior and Grand Champion Bull: Imp. Itchen May King, shown by Dupee.

Reserve Senior Champion Bull: Yeoman's King, by Albertson.

Junior of Edgemoor, shown by Dupee.

Reserve Junior Champion Bull: Ferman's Iowa Boy of the Oaks, shown by Looney.

Senior and Grand Champion Cow: Imp. Itchen Wood Sorrel, shown by Dupee.

Reserve Senior Champion Cow: Marguerite of Pinehurst, shown by Dupee.

Junior Champion Cow: Veda of Chicon, shown by Gile.

Reserve Junior Champion Cow: Polly of Chicon, shown by Gile.

#### RED POLLED CATTLE.

This duel purpose breed was judged by Elliott Davis, Lincoln, Neb.

Bulls 3 years and over: Lordly, shown by F. H. Porter, Halsey, Ore.; Crobot, by R. R. Cartwright, Angeles Camp, Calif.

Bulls 2 years and under 3: Dandy Heil, shown by Cartwright; Rock, by Porter.

Senior yearling bull: Archibald, shown by Cartwright.

Cows 3 years and over: Pansy, shown by Porter; Laura Davyson, by Cartwright; Hortena 10th, by Porter.

Cows 2 years and under 3: Hortena 21st, shown by Porter; Pansy 3rd, by Porter; Molly Dvysen, by Cartwright; Baby Reene, by Cartwright.

wright.

Senior yearling heifers: Maple Leaf, shown by Porter; Reubens Ethel, by Cartwright.

The other classes were well divided between the two exhibitors.

#### CARNATION CUP FOR CHAMPION MILKMAID.

Miss Lily Ramatici of Petaluma, Cal., is the international milkmaid champion and winner of the Carnation cup trophy offered by E. A. Stuart of Seattle, president of the Carnation Stock Farms of Washington and Wisconsin. She won the title over forty competitors from every part of the United States at the international milkmaids' contest held at the Panama-Pacific International Exposition in San Francisco. Her pail contained nine quarts of milk when she finished her three minutes, the time allotted to each contestant. The cow she milked is Fidessa Bloom, possessing the highest milk record in California.

Forty white-clad and laughing milkmaids of many ages, nationalities and complexions, and forty rather puzzled black and white Holstein Friesian Carnation cows furnished colorful amusement to a crowd of 15,000 people who watched the contest.

Other winners who received prizes were Miss Mary Andrea, San Francisco; Mrs. Lizzie J. Brown, Cincinnati; Miss Dorothy Fritz of Pennsylvania.

The international milkmaids' contest for the Carnation cup will be made an annual event by Mr. Stuart. The next contest will be held in Milwaukee, Wis., next fall.

## White Leghorn Hens

With guaranteed trap nest records of over  
200 EGGS PER YEAR  
at \$25 per dozen.

Can mate an unrelated male of very high record pedigree if desired. Prices on single fowls or larger lots on application.

### The Shoup Hennerly

ROUTE 2, LYNDEN, WASH.

tile, the length of time kept and the condition known beyond question. A system good for exporting and for the local marketing as well is being devised and poultry farmers will do well to adhere strictly to its regulations and thus attract the best markets.

#### SOUR MILK FOR POULTRY.

The Missouri Station gives the following good sour milk ration.

Corn, 4 parts.  
Wheat, 2 parts.  
Bran middlings, 1 part.  
Corn meal, 1 part.  
Sour milk separately.

Give 100 hens 2½ gallons of milk and from 19 to 25 pounds of other food a day.

#### WINTERING BEES.

According to the Office of Information, U. S. Department of Agriculture, the aim of the beekeeper should be to maintain a temperature about bees of approximately 57 degrees F. When the temperature in the hive falls below this point, the bees form a cluster. Those in the center begin to generate heat by muscular activity, and those on the outside crowd together to prevent the escape of the heat the others are generating. The lower the temperature outside of the cluster is permitted to fall, the more heat must the bees produce inside where the temperature frequently reaches 90 degrees or even more in abnormal colonies. Prolonged excessive heat production exhausts their vitality, and even if they survive the winter they are unfit for the task of brood-rearing in the spring. This is usually the cause of "spring-dwindling." The adult bees, worn out by the hard winter, die faster than the young ones emerge, and the population diminishes.

Increased heat production also causes increased consumption of stores. This in turn leads to an accumulation of feces with consequent irritation, further activity and more heat production. Sometimes the bees are unable to retain the feces and they are then said to be suffering from dysentery.

These facts emphasize the necessity of properly insulated hives in any locality where the temperature often falls to 40 degrees F. It is not possible to give the bee hives too much insulation. To give them too little is very easy and practically universal. The more heat the bees are called upon to generate the more honey will they consume. In consequence, if inadequate stores are provided for them they starve before the winter is over. The thrifty beekeeper will aim to save bees, not stores, and will therefore be liberal in his providing. If he really wants to save stores, however, he can do

## Twenty-Second Annual Show Tacoma Poultry Association

Entries close December 20, 1915, and birds must be in the show room December 27, at 8 p. m.

Premiums on all varieties doubled where there are more than one hundred fowls entered.

Premium list and entry blanks sent for the asking. Don't wait but write at once.

Be sure and enter some of your fowls if only a trio. Help to boom your breed by making a large entry. Come and spend the week in the show room.

Banquet Friday evening.

Fred A. Johnson, President, Tacoma.

W. M. Coats, Judge.

William Shepherd, Secretary, Snmner, Wash.

## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

#### FEEDING AND FEED COSTS.

Replies to inquiries indicated by number are given by V. R. McBride, W. W. Experiment Station, Puyallup, Wash.

1. We have a flock of two hundred Leghorn pullets that are over six months old. These pullets are being fed a home mixed scratch feed and all the green feed they can eat; yet they are not laying. Can you advise us what to do to start them to laying?

Reply. Pullets may be fed the best scratch feed on the market, and if no other food is given, the egg yield will be very small. I would suggest that the birds be supplied with a dry mash composed of the following.

5 lbs. wheat bran.  
5 lbs. wheat shorts.  
5 lbs. ground oats.  
2 lbs. fish or meat meal.  
2 lbs. soy bean meal.

The pullets should be allowed all they will eat of this mixture in addition to their regular grain ration morning and evening.

2. Can fish meal be used as a substitute or meat meal with good results? Will the eggs taste like fish?

Reply. We find fish meal equal in feeding value to high grade meat meal and better than the lower grades. We have tried by heavy feeding of fish meal to taint the eggs, but have been unable to do so.

3. How much will it cost a year to feed Ancona hens?

Reply. The annual cost of feeding hens will, of course, depend on your local feed prices. At the prices we are paying for feed at the present time the cost for feeding such hens as the Ancona will average about \$1.40 per year.

#### OREGONS

The Experiment Station at Corvallis, Oregon, has continued experimenting in the selection and breeding of poultry until some phenomenal records have been attained and a new cross breed established, which they call "Oregons." A hen has just finished a 300 egg record for one year. This fowl traces back to the hen which has a record of 834 eggs for four consecutive years. A flock of 60 hens of similar breeding and selection have an average record of 220 eggs a year. This is work along the right line. The 200 egg record flock seems to be a possibility. By another year we shall know more about how to maintain that degree of productiveness.

#### SYSTEM IN EGG FARMING.

A system for standardizing the egg industry of Puget Sound is being organized at Sumner. This movement has been greatly needed for the past couple of years. To meet the exporters' wants thousands of dozens are required to be available at a moment's notice. There must be uniform color, size, guaranteed infer-

## PULLETS WANTED

Those who have good pullets of any of the standard breeds to sell in quantity lots of 25 up to several hundred will please write particulars.

J. L. CRAIB,  
1022 Western Ave.,  
Seattle, Wash.

## -TANCRED-

THE TRAP NESTED  
WHITE LEGHORNS

TRAP NESTED CONTINUOUSLY SINCE JULY, 1905

BREEDING STOCK

HENS--PULLETS--COCKERELS

Send for Price List

THE TANCRED FARMS - - - KENT, WASH.

For Sale—Fine Turkey Gobblers and Emden Geese.

MISS E. M. KELOGG

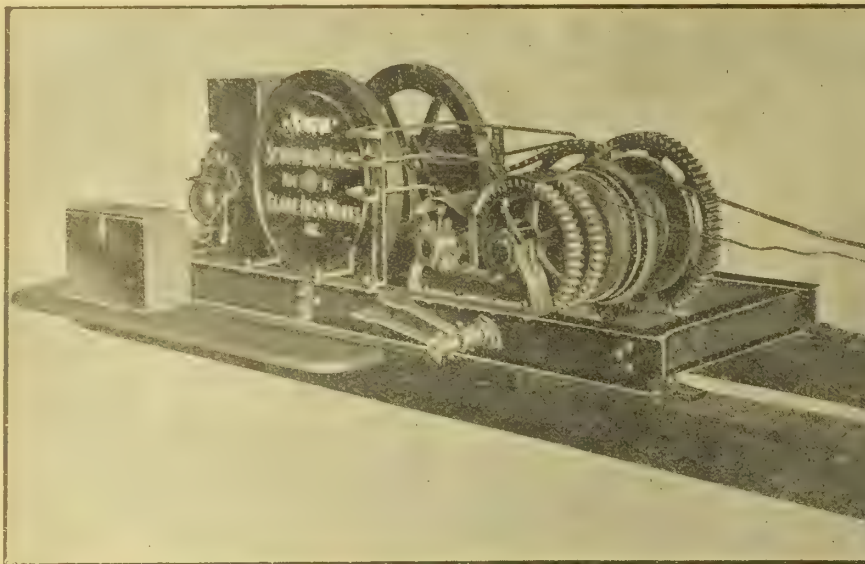
R. F. D. No. 3 Tacoma

it by supplying insulation instead of stinting the bees.

When frames of honey are supplied, they should be given before cold weather in order that the bees may form a proper clustering space by moving the honey. Extracted honey may also be fed. Honeydew honey causes dysentery, and if present in the fall, should be removed. In place of extracted honey, a thick sugar sirup is more frequently supplied. This is made of from 2 to 2½ parts of sugar to 1 part of water, by volume, with an ounce of tartaric acid added to each 40 or 60 pounds of sugar.



# The GLOBE STANDARD STUMPING WINCH



Our gasoline stump pulling machines have been used on the Pacific Coast during the past two years with most excellent success. Land clearing work has been done efficiently, rapidly and economically. Tracts of 10 to 20 acres were cleared and leveled in a comparatively short time with one of these machines, enough powder to shatter the large stumps, and 2 helpers. One of our patrons cleared a tract for some distance on the Pacific highway by the day. His bill was so much below the engineers estimate that the supervisor was skeptical until shown that the work was satisfactory. This party has sold his 8 H. P. engine size and bought one of our 9 H. P. double drum, with 60 H. P. pulling strength. Buyers all report satisfaction. These machines are suitable for those who have large tracts to clear, for any who desires to contract to do stump pulling, or for a community where two or more farmers may unite to buy a machine and do their own clearing in time to put in a spring crop.

Write at once for full particulars regarding specifications and prices. Machines are now being turned out on short notice.  
(Please mention this paper.)

## GLOBE IRON WORKS

17th and Dock St.

TACOMA, WASH.

## THRID ANNUAL Pacific International Sale of Registered Holstein Cattle

**100 HEAD** AT **100 HEAD**  
**UNION STOCK YARDS**

**North Portland, Oregon**

**FRIDAY, DECEMBER 10th 10 A. M.**

Consignors are:

Wm. Bishop, Chimacum, Wash.  
Hugh Nesbit, Chimacum, Wash.  
Chas. Eldridge, Chimacum, Wash.  
E. B. Marks, North Yakima, Wash.  
Geo. A. Gue, North Yakima, Wash.  
Wilbur Newell, Seghers, Ore.  
Frank Haberlack, Clackamas, Ore.  
Stickney & Barnard, Portland, Ore.  
David McKeown, Gresham, Ore.  
Monroe Co., Spokane, Wash.  
Simmons Bros., Ridgefield, Wash.

Some of the best selections from these herds will make this one of the best sales of the West.

All stock tuberculin tested, free from blemish and not over eight years of age.

For further particulars write

**GEO. A. GUE, North Yakima, Wash.**

## BLUE BLOOD OF PONYDOM

These are the best

## SHETLANDS

for the price ever offered in the West and as good as can be found anywhere.

**YOUNG STOCK  
SPECIALLY PRICED**

We wish to send you our printed price list.

If it is bargains you are looking for, write us or see us at the Cascade International Stock Show, North Yakima, November 22-27.



## CRESTLAND FARM

**Dr. Green & Son.**

**NORTH YAKIMA, WASH.**

## ALBERS BERKSHIRE HOG FEED

It is not possible to make a balanced ration with barley or corn alone, because the protein and ash are deficient and for the best results must be supplemented. Palatability must be considered in a hog feed as must laxativeness and high digestibility.

ALBERS BERKSHIRE HOG FEED is a combination of Cane Molasses, Soya Bean Meal, Ground Corn, Ground Kaffir Corn and Ground Barley. Cane Molasses has a wonderful feeding value, is very palatable, much relished by farm animals and aids in the digestion of other foods with which it may be fed. **One hundred pounds of Cane Molasses is equal in feeding value to one hundred pounds of Corn.** Soya Bean Meal is one of the richest nitrogenous feeds on the market and analyzes high in fat. It is easily digested because of its low fibre content. The feeding value of the other grains is well known to the average feeder, and the combination as we have it forms a balanced feed that will produce results.

ALBERS BERKSHIRE HOG FEED on today's market costs you several dollars per ton less than Corn and being a concentrated feed is much better than corn.

Ask your dealer.

The price is right.

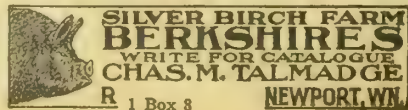
## Albers Bros. Milling Co.

SEATTLE TACOMA LOS ANGELES PORTLAND SAN FRANCISCO

## Registered Duroc Jersey Hogs

Thrifty, prolific strain. Bred sows for autumn and winter delivery.

**J. Hanks & Sons Ellensburg, Wash.**





630.5  
NO. 4

# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-eighth Year

TACOMA AND SEATTLE, WASH., DECEMBER, 1915

No. 12

## THE MERCHANT MARINE.

Congressmen are urged to solve the merchant marine problem. There seems to be no question about merchant marine preparedness. It is the "how" it shall be done to accomplish something.

The Hon. W. C. McAdoo proposes a plan which is to create a shipping board, consisting of the Secretary of the Navy and the Secretary of Commerce, as members ex-officio, and three members to be selected by the president and confirmed by the Senate. This shipping board should have authority to organize a corporation, or corporations, and to subscribe to its capital stock, and should have authority to vote the stock belonging to the United States for the election of directors, who in turn are to choose the officers and employees of the corporation.

The purpose of this proposed shipping board is to build some ships for merchant marine purposes and for use as auxiliaries in case of need by the government. It is proposed that \$50,000,000 be set apart for the purpose of ship building under the supervision of this board and soon as finished the ships to be put into service wherever needed, particularly with a view to the opening up of the South American trade, and other routes which are not attractive to private ship owners at the present time.

It is proposed that the shipping board have authority to lease the

cargo ships to responsible individuals, firms or corporations, for at least 3 per cent. of cost of construction and 4 per cent. on depreciation.

Mr. McAdoo realizes that the Pacific Northwest has suffered severely for lack of shipping facilities. The main crop for export from this section is lumber and we are seriously handicapped also in the movement of fruit, grain, dairy and live stock products to outside markets.

This plan would give the government control of sufficient number of vessels when needed for service in connection with the navy. The stock of the ship building corporation should be open to purchase, also by the public, even though the majority is held by members of the board who represent the government. It is likely that vessels built and operated between this country and South America might pay expenses during a course of five or ten years and once established through this method of cooperation on the part of the government, might become self sustaining. Private capital is not attracted as a rule, to investments which require so long a time for development to a profitable basis.

But whether the government is to build ships and operate them independently, or through some co-operative plan, or again by means of new marine laws favorable to private ownership, action should be taken at once. That is the form of preparedness to which no one in the Pacific Northwest has any objections to offer.

## COST OF APPLES.

The Experiment Station at Corvallis, Oregon, has collected information to determine the cost of growing apples, and from a large number of replies from orchardists, concludes it costs on an average \$112.82 per acre to clear the land and plant to apple trees. The average cost of production is estimated at \$1.18 per box, of which over 25 cents is calculated for maintenance, 47 cents for overhead charges and 44 cents for handling. These figures are probably based on high orchard valuations and expert help at high wages. Of course this means finished standard grades and pack.

Too high valuations have frequently been placed on apple orchards; for instance, an owner puts a speculative value of \$2000 per acre on his bearing orchard when the average actual worth would be nearer \$600.

A leading apple grower in Michigan, describing his practical fruit growing methods, stated he would rather grow a bushel of apples than a bushel of potatoes. Potato growers figure to grow the spud profitably at considerably less than 2 cents per pound. A difficulty confronting apple growers in the Pacific Northwest at the present time is the want of a wider market.

The average returns by a leading shipping association, on 124 carloads of apples, recently, was \$1.31 per box. The varieties included Spitzenbergs, Winter Banana, Newtowns, Delicious, Winesaps, Rome Beauty, Staymen, Grimes, Jonathan and W. W. Pear-

maine. The first four varieties mentioned brought over \$1.50 per box, with Spitzenberg as usual in the lead. The cost of apples, like butter fat or eggs, is more than it should be, and those who are most successful are finding some way out to reduce cost of production.

## WINTER CROPPING.

In the Coast sections of Washington and Oregon much of the forage crops are grown during the early spring months. Late spring seeding on the clay upland soil is not satisfactory, as a rule, because the dry season begins early, some years in May, but with fall seeding there are, in numerous places, good crops of clover, vetch or mixed vetch and grain, ready for harvest and for feed in May. On the valley soils spring seeding continuous to be the practice, but in some cases this land is valued and taxed at too high figures for profitable dairying. Those accustomed to the valley conditions sometimes hesitate to go onto the uplands. They have not understood that here winter cropping is most successful. Numerous tracts of logged off lands are being cleared this winter with a view of planting some early crop, then to seed with clover or vetch in the early fall.

Red clover standing from 12 to 18 inches may be seen during the winter months on some of the most gravelly soils in the Coast Section of Washington. With the hardy legumes dairymen here are planning for more winter cropping.



First prize Holstein dairy herd at Panama-Pacific Exposition, San Francisco, California, 1915, owned by Wm. Bishop, Chimacum, Wash. Besides the awards at the Cascade International and the Lewiston Shows, Mr. Bishop won the champions at the Portland Show, including: Senior champion bull, junior champion bull, grand champion bull, senior champion cow or heifer, junior champion heifer and grand champion cow or heifer.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
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Merry Christmas, and may our  
many readers find happiness through  
service of lasting value in 1916.

## FINDING THE CAUSE.

Cow testing associations are now  
being organized in numerous com-  
munities among dairy farmers in  
Washington. There is a feeling of  
"want to know" which cows in a  
herd are making a good margin of  
profit for their owners and which  
are not. Some dairymen get as large  
cnecks from the creameries as others  
with nearly twice the number of  
cows. The cow testing work will  
help to find where the difficulty lies  
causing the difference.

## THE WANT AND CAN.

At a farmers' institute the speaker  
was asked to talk on corn growing.  
His brief reply was: "If you want  
to grow corn I will tell you how." This terse phrase is very suggestive. Do you as a farmer want better cows? Then it is not difficult to learn how, and there is a practical way to get them. Do you want to standardize your leading product so it will be acceptable in the most dependable markets? Then you may get that information, and it can be done. Do you want to help build up a dairy industry, fruit or poultry or a combination of these in your community; then there is a practical way to do it. The essential foundation is the "want," the "will" and "can" naturally follows.

## INFLUENCES OF LIME.

### On Coast Section Soils and Products.

[Extracts from an address by Henry Bukey before the Washington State Dairymen's Association at Snohomish, Washington.]

The reason that the Western portions of Washington and Oregon are deficient in lime generally is owing to the mildness of the climate here; made so by the ocean currents flowing from off the South Sea Island and striking this Northwest Pacific Coast. The mildness of the climate produces a humid atmosphere which

## THE NORTHWEST HORTICULTU

causes a wonderful vegetable growth, producing the giant trees of our forest to the lesser growing luxuriant plants. The annual plants, including grasses and the leaves on our deciduous trees, and other plants fall in autumn and lay upon the ground for many weeks and months before they become decomposed or decayed, thus forming the humus and nitrogenous matter for the soils. This slow decomposition and decaying of such vegetable matter causes the same to ferment and sour, causing an acid to be formed. This acid is driven or carried down by action of the rain in the soil, and to counteract this acid so formed the lime in such soils are consumed. This process has been going on for ages.

It is quite possible that there was originally as much lime in the soil of the Western part of these states as in the Eastern part, but by the process mentioned more than any other, the soils of the part west of the Cascade Range have generally become deficient in lime, and if not supplied may become totally depleted.

### Necessary for Bodily Health.

Not only would no useful plants grow but it would prove the extinction of the animal living upon the land, as all animals require bones, and if there was no lime in the soil there would be no material for the formation of bones, for our bodies, and that of the lower animals. That lime is the source of all bone formation is not questioned. When mentioning bones the term includes the cartilage, tendons and ligaments of all animals as they are of bone constituency. About a quarter of the bones formed from lime of an animal are composed of carbonate of lime, the remaining three-fourths from phosphate of lime. And phosphate of lime is a compound formed from lime and earth mineral or earth bone, which is a tri-basic compound composed of sodium, magnesium and chloride of calcium. Thus, if there is not sufficient lime in our soils this bone formation material will not be produced, and in the degree in which such production is reduced, in such degree is the growth of all animals hindered and retarded, and the animal thereby becomes constitutionally weakened and made the prey to diseases.

The bone formation is complete in the human body in twenty to twenty-four years, and that of most of our domestic animals in two to four years, so you will understand that it is the young that need the bone forming material most, and all authorities agree that animals can only acquire this bone forming material from eating vegetation that has taken the lime up in its growth.

A human being does not suffer as much from the soil being deficient in lime as do the lower animals, for we consume a vast amount of food grown and imported from other places where the soil is not deficient in lime, but with young domestic animals it is different. They are confined to the soil and kept or herded, where, if deficient in lime the condition is very unfortunate.

In a recent publication appeared a statement of a doctor in the state of New York who, in his laboratory test for tuberculin stated it was his opinion that the primary cause of tuberculosis in cattle was caused from lime starvation.

## AND DAIRYMAN

So our medical practitioners of the claim that the main cause of carbuncles and boils are from drinking of our soft water which contains no lime, that such ailments yield to treatment of lime water usually; that if our children are grown upon land not containing lime and drink water which is lime, their second teeth will be decaying when they are 12 to 18 years of age.

### Effect Upon Milk.

Analysis of milk from cows upon land containing a sufficient lime shows that there are 100 grains of lime to each pint of milk. There is a great source of lime for our children and young stock if the soil is deficient this source is lost. Manufacturers preserve milk in various ways in Western Washington inform me there is but a trace of lime in the milk. The beneficial effect of lime on milk is very great, so much so that some manufacturers of prepared milk place a lime preparation in the milk they sell. This in reality is a blessing to the consumer. But what about the young stock? They can only acquire it by nursing or taking it up through consumption of vegetation that has taken up the lime in its growth.

The absence of lime in the milk does not effect the butter-fat of the milk, but it does effect the main body of the milk that the butter-fat is taken from. There is a very closely drawn line between milk that is alkaline, that is, milk that contains calcium salts and phosphate of lime, and milk that is faintly acid. The former has a greater body density and is finer in texture, while the other has a coarser curd and more moisture. The milk that contains the necessary amount of calcium salts and phosphate of lime will contain less moisture and will make fine cheese, while the other will contain so much moisture in the curd that a good cheese cannot be made from it. Also more butter can be made from cows pastured upon land containing sufficient lime than from those pastured upon land deficient in lime.

### Liming and What Form to Use.

The leading authorities upon soil treatment in the United States have almost unanimously decided that the proper lime to use to improve our soils is "lime carbonate" which is ground limestone. This is the natural limestone crushed and ground very fine. It is not burnt or otherwise treated. The burning of limestone produces a quick lime or caustic lime. Such limes as air-slacked lime and hydrated are all caustic lime, and the application of such to the soil will cause more injury for the first two years than any possible benefit it may produce.

The loss of a season's benefits is too important to be overlooked in deciding on what form of lime to use. From its many advantages, lime carbonate is assuredly of first importance in soil fertility. Hilgard, an eminent authority, says: "Lime carbonate may be said to be the basis of civilization."

### Amount of Lime for Various Soils.

In regard to the application of ground limestone to the various soils and its effect upon plant life, I will herein enumerate the various classes and divisions of soils in Western Washington, giving the amount of

lime to apply in each class of soil. Of course, there are soil conditions effected locally from various causes and conditions that would require more or less lime, or no lime at all.

The three divisions of farm lands of Western Washington are: First, bottom land lying on the banks of rivers; second, bottom land or plain land lying from 30 to 300 feet elevation; and, third, upland, the latter being generally timbered land.

The bottom land is generally of a heavy clay, mixed with some sand, or a sandy loam mixed with clay and humus. The heavy clay land generally needs from 1½ to 3 tons of ground limestone per acre. The last mentioned amount is needed if the land is sour from non-decomposed vegetation. Sandy loam mixed with clay, the greater part being sand, will require but 1 ton per acre, every 7 years.

The plain or second bottom land will be found generally deficient in lime, but if well drained is not so apt to be sour like the lower bottom land. On such land the farmer will find it the best investment he can possibly make to supply it with from 1 to 2 tons of ground limestone per acre, which will last 8 or 10 years.

The upland and timbered land are generally of shot clay or clay with sand and gravel mixed and deficient in lime. Such land by reason of the great rainfall during the winter and early spring has sufficient plant food on account of the solvent powers of the water acting upon the soil to start vigorously early vegetation, but by the middle of June this supply becomes exhausted and vegetable growth generally ceases. Then is the time your apples begin to show signs of scab on the surface. Lime on such soils produces a wonderful change for it unlocks from this virgin soil additional plant food in excess of that rendered available by the action of water and continues throughout the entire season. Apples by reason of this added nourishment are less affected with scab, more smooth and perfect. The amount of ground limestone to accomplish this is 1 ton per acre every 5 or 6 years.

Ground limestone should be spread broadcast over the pasture and meadow land in the winter or early spring. A certain seeder sold by the various implement dealers will work well as a lime spreader; such seeder consists of a hopper-shaped implement that fastens on the rear end of a wagon box, with sprockets that clamp onto the hind wheels of the wagon. A chain gear fits into the sprocket wheel and onto the wheel of the seeder. One man drives the team and another feeds the ground limestone into the hopper of the seeder. Such a seeder can be bought for about \$15 and will spread from 10 to 12 acres per day of this finely ground limestone.

The application of ground limestone will fertilize and sweeten the soil, kill and prevent moss and other acid growing plants, and furnish lime to all vegetation that the stock consumes. The cost of liming the soil is so small compared with the benefit which is so great that where it has been tried those using it become strong advocates for its application wherever the soil is deficient in this element.

It has been stated that if ground so very fine it will be wasted and



carried away by the soil water, and be lost. Such is not the case, as when it is once incorporated with the soil, it is not subject to waste like burned or caustic lime, for burnt lime being calcium oxide, its affinity for carbonic acid causes it to seek water, as all water has more or less carbonic acid. Ground limestone has its calcium wants satisfied; therefore it has the proper balance for plant food by reason of having this proper balance as nature provided. You can mix your various commercial and other fertilizers with ground limestone when applying it to the soil, and there will be no corroding, scabbing or other injurious effects to vegetable life.

### APPLE GRADING RULES.

#### Growers to Meet December for Revision.

The apple growers are advised by Commissioner T. O. Morrison to meet at Spokane, December 26th, to decide on grading rules for 1916. According to provision of the horticultural law. The present rules may be adopted or amended as growers and shippers may decide. Mr. Morrison suggests that in offering amendments to the grading rules now in effect it is hoped that all growers and shippers will bear in

mind that during the season 1916 the inspectors of this department will consider inspection for infection to be of first importance and the enforcement of the rules governing grade and pack of next importance in the inspection of fruit shipments. Copies of the horticultural law and the grading rules now in effect will be sent to growers making request for the same.

### PEAR CROP AND CULTURE.

The pear crop is short of the average yield in the United States this year. At the present time dried pears are quoted by the wholesale grocery trade on Puget Sound at 11½ cents per pound for extra choice grade in 25 or 50 pound boxes.

Based on 4 to 1 of ripe to dried fruit the equivalent is more than \$1 per box for the fruit as picked. There appears to be a market for evaporated pears. The market for green pears varies, but the average for a number of years is usually good for the growers who make pear growing an object.

There is a growing cannery market but the price paid will not permit of shipment for any considerable distance. Pear growers in the Northwest may find most satisfactory outlet by developing the green and the evaporated markets.

An enthusiast on pear growing directs attention to the high state of perfection and abundant crops of pears produced in the Pacific Northwest of such varieties as Bartletts, Comice, Fall Butter, Bosc, Clairegeau, Louise Bon, Anjou, Flemish Beauty, Burre Easter and Winter Nelis.

In this climate pear trees will grow on almost any soil that is deep enough and that drains out. It matters not if there is water in the soil constantly if it moves, but stagnant water on the soil proves fatal to pears as well as other fruit trees. The ideal soil for a pear orchard is loam or shot clay, underlaid with a subsoil of clay, rolling enough to insure drainage below the surface and air drainage above the surface.

Before planting, the land should be plowed deep, and if subsoiled, so much the better. Soil that drains well naturally, soils that have gravels beneath the subsoil, for instance, need not be artificially drained, and subsoiling is not a necessity. On flat lands, however, that do not readily drain out, subsoiling and the draining with tile are both necessary.

There will be no trouble about pollination in a home orchard where a number of varieties are grown in close proximity to each other. In the commercial orchard it is best to plant two or more varieties, so as to pollinize each other; but, if only one variety is wanted, say Bartlett, then at least 10 per cent. of the trees should be some variety that will pollinize the variety that is being set out. The Bosc is considered rich in pollen; and, being a splendid pear, it is well to grow it with the Bartlett, every third row being set to Bosc.

#### Cultural Methods.

After the trees are set out, they should be cut back 15 to 18 inches above the ground. The next summer it is best to allow four or five limbs to grow, keeping all other limbs off. At pruning time three or four limbs evenly distributed around the stem should be left and cut back about one half of their growth. The trees

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should be grown with an open hollow head, as the sunshine never scalds either trees or fruit in this climate, and they need all the sunshine and air they can get.

Cultivate as early in the spring as practical and keep a dust mulch on the surface all summer. If the land tends to wash in the winter, sow some cover crop, oats, rye, vetch or crimson clover late in August, harrowing the seed in well. The September rains will start the crop, and the land will be sufficiently covered by the time the excessive rains fall, or the snow melts, to prevent washing. Turn the crop under in the spring, and it helps to keep the surface mellow and to retain moisture.

Some of the pear growers in the Pacific Northwest are now planting the trees farther apart than formerly, growing first cultivated crops between the rows, then later on they raise peas or vetch as the trees become older, and when fall grown the ground is sometimes seeded down to clover. These crops enrich the soil with nitrogen and when a liberal dressing of ground lime stone is added, a considerable amount of feed may be obtained in connection with a pear crop. Those who practice the double cropping method figure ahead for control of the moisture during the dry season. There may be times when some of the leguminous crop grown should be cut and strewn around the trees in the form of mulch to conserve moisture. Then again water may be applied artificially, or the ground in other instances is cultivated for some distance around the trees.

Pear growing is gradually being given more attention in the coast sections of Washington and Oregon.

### PUYALLUP VALLEY BERRY BUSINESS.

According to the Puyallup Valley Tribune, the shipments of fresh blackberries in 1915 was not in-

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creased materially over last year, but there were 3,176,282 pounds of blackberries canned as against 2,534,354 pounds during 1914. The shipments of red raspberries increased practically 30 per cent. this year, or from 174,431 crates to 232,825.

Fresh shipments of strawberries, owing to unfavorable weather conditions, were much less this season than last, but the deliveries to the



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canery were increased in proportion.  
**Loganberries Big Gainer.**

Loganberries made a spectacular leap in quantity this season, about four times as many being shipped and twice as many, or practically half a million pounds, being canned as in former years.

A decrease in the quantity of red raspberries put in the cannery is shown this year, only 1,872,215 pounds being put up, as against 2,620,312 last year.

The juice making industry has just begun. It takes several years to get a good dependable product established under a brand which the market recognizes as staple. The Loganberry juice is now generally handled by the grocery trade similar to bottled grape juice.

Raspberry cider (or raspberry shrub), a condensed form of the red raspberry juice, is being put on the market and destined to become very popular. These juices are healthful and the sale will be extremely large when prices are low enough for popular purchase. The parafine paper container instead of bottle, if made practicable, is likely to reduce the cost to consumers somewhat. The future fruit business of the valley, as well as other parts of the Pacific Northwest, will take the form of some highly finished product at their home manufacturing plants. This takes time and patience but in the main the work being accomplished is according to correct methods for satisfactory results.

#### FRUIT PACKAGE SERVICE IMPROVED.

Manufacturers of veneer fruit packages are developing plans for the establishment of warehouses in all of the principal fruit districts of Oregon, Washington and Idaho. This plan of furnishing their trade direct through co-operative warehouses is a development brought about through adverse conditions encountered in ser-

ving this trade heretofore through present established channels.

This plan will open a new industry in each of the important fruit districts, especially where berries are an important item of production, since it is proposed that the manufacturers ship their product in knock-down form so as to avoid the excessive freight rates on made-up container and eliminate this expense in the delivery of their product to the growers.

Each of these warehouses will be equipped with the necessary machinery for making up berry boxes, tin-tops, baskets and crates, and will afford considerable employment to local labor. In addition it is planned to employ a local manager for each of the warehouses who will be selected from among local residents who are familiar with the needs and requirements of the growers, for this class of supplies.

It is anticipated that the plans will be matured and the warehouses established some time shortly after the first of the year. The manufacturers contemplate stocking these warehouses to meet the maximum requirements of the several districts. This will obviate the necessity of growers contracting or purchasing their boxes and crates from four to six months in advance of the picking season, and will assure them a full supply of containers to market their entire crop. During the past season the full crop was not anticipated in some districts and the rush for containers late in the season made it impossible for manufacturers to promptly furnish all demands and as a result considerable fruit was wasted.

This new service is similar to the plan followed in the middle West and South and is expected to result in a more economical serving of the requirements of berry growers in the way of packages and crates, as has been the case in other territory where the system has been established for several year past.

## AGRICULTURE

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### Report and Recommendation of the Secretary of Agriculture

David F. Houston, Washington, D. C.

In his annual report for the fiscal year ending June 30, 1915, David F. Houston, Secretary of Agriculture, indicates a number of important measures necessary for the betterment of agriculture, both on the production and marketing sides, and for the conservation of the resources of the Nation. These measures await the consideration and action of the Congress and involve:

1. Legislation designed to promote the better handling and storage of farm products and the trading on the basis of fixed grades and standards, including a permissive warehouse act, a cotton standards act, a grain grades act, and provision for a market-news service to obtain and disseminate accurate information regarding crop movements and prices.

2. A land-mortgage banking act which shall inject business methods into the handling of farm finance and place farm securities upon the market

in a responsible way.

3. Assistance to communities near the national forests in road building and similar improvements through a plan involving the advancement of funds for these purposes to be charged against the State's future share of receipts from the forests. This action would promote local development of agriculture and other resources.

4. Authority to grant water-power permits within the National Forests for fixed periods. Such authority undoubtedly would aid water-power utilization.

5. The classification of the remaining public grazing lands to determine their character and to secure information upon which to base plans for their future improvement and use.

6. Authority for the sale of lands needed for local enterprises in certain localities within the Alaskan forests after examination and classification by the department, with definite pro-

## GROUND LIMESTONE

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Clover, Vetch and Pea crops require lime, and the yield will be small in proportion as the soil is deficient in lime, and larger as this basic element of fertility is abundant. Ground limestone, the best and cheapest form of lime, applied to the soils now during the rainy season serves to make available the nourishment from other elements of fertility contained in the soil to the crops during the growing season. We supply ground limestone direct in ton or car lots; also through local dealers.

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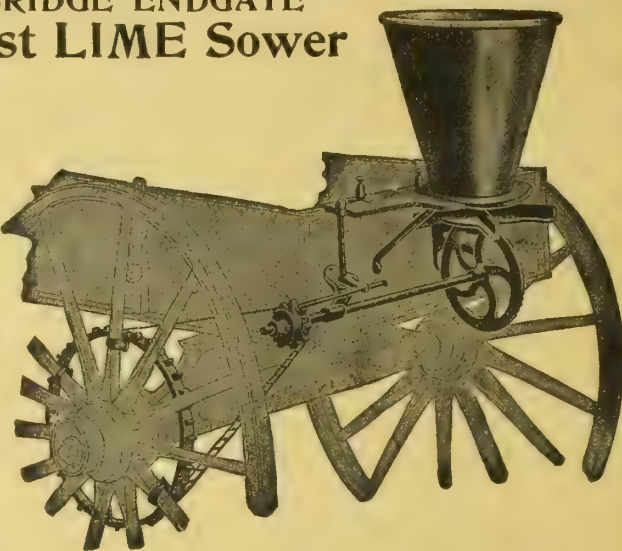
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**MANTLE LAMP COMPANY, 351 Aladdin Building**

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vision against alienation of those chiefly valuable for water-power sites, for the handling of timber resources, or for other public purposes.

7. More effective control over the production of hog-cholera serum. To accomplish this purpose, a definite plan, involving the establishment by the Federal Government of a station for testing all serum intended for shipment in interstate commerce, is outlined for consideration.

8. Provision for a well-balanced enlarged program for agricultural research, when normal conditions are restored.

9. The continuance of appropriations for the purchase of forest lands in the Appalachian and White Mountains until areas sufficient to be influential in protecting those regions are acquired.

The report also recommends that the present unwise distribution of authority between the Departments of Commerce and Agriculture over fur-bearing animals in Alaska be corrected, and that certain amendments necessary to the effective administration of the Alaska game law be adopted.

#### Foreign Demand for Foodstuffs.

In discussing the agricultural situation the Secretary states that in spite of the greatly disturbed condition of the world during the last 15 months agriculture in the United States, as a whole, has prospered. While the southern cotton farmer has suffered severely, the foreign demand has stimulated the production of foodstuffs, bringing, in the main, increased prices to the producers of such commodities. He refers to the peculiarly fortunate agricultural situation in which the outbreak of the war found this country shows that the exports of agricultural commodities have greatly increased, and states that the interference with the exportation of cotton did not prove to be as great as in the early part of the season it was apprehended it would be.

#### Marketing and Distribution.

Under marketing and distribution, the Secretary says that very satisfactory headway has been made by the Office of Markets and Rural Organization and that results of much value have been secured. That office has planned to keep in close touch with individuals and associations dealing with particular marketing problems over specific sections of the Union. Conferences with groups of producers interested in the same problems have been held and others will follow as occasion warrants. The report points out that a great many marketing troubles have their origin in irregularity of production or in lack of a stable and balanced agriculture. It indicates also that many of the difficulties which some expect to remove by rural-credits legislation can be obviated only by improvement in conditions governing the conduct of farm operations, trading in farm products, and the ownership and exchange of farm lands.

He points out that while community action will aid materially in solving some of the marketing problems confronting the American farmer, yet there are certain undesirable and unjust conditions in connection with farm products and farm finance which no amount of private effort, whether engaged in by farmers singly or jointly, can overcome. These conditions statutory enactments alone

can correct. The legislation suggested would go far toward solving the difficulties.

The enactment of a Federal warehouse law, it is said, would be of great benefit. The most desirable action on the part of the States in this connection would be the passage of laws which would guarantee the integrity of warehouse receipts. The warehouse bill introduced at the last session of Congress, if enacted into law, would promote the better storage of farm products, increase the desirability of receipts as collateral for loans, and therefore would be of definite assistance in the financing of crops. In addition, it would serve to promote the standardizing of storages, of warehouse receipts, and of marketing processes.

#### Rural Credits.

The studies of the department relating to rural financial conditions in this country have been continued and broadened. Inasmuch as the matter of preparing a rural-credits bill is now in the hands of a joint committee of the House and Senate, the Secretary does not discuss the subject at any length. The rural-credits problem, he says, is essentially complex and there is no single solution of it. The activities of the State departments of agriculture, of the land-grant colleges, and of the United States Department of Agriculture all contribute to its solution. Further Federal legislation, such as the cotton-standards act, a grain-grades bill, a permissive warehouse law, and proposals for the improvement of marketing conditions also will aid directly in solving it. In addition he recommends legislation by the States permitting the creation of personal credit unions and removing any obstacles which may exist to the easier and more orderly handling of farm finance.

The States Relations Service, which has general charge of the department's business with the State agricultural colleges and experiment stations, was organized during the year. This service also administers the co-operative agricultural extension act of May 8, 1914. It is shown that much has been done toward creating the machinery necessary for carrying out the provisions of the act, and the results accomplished during the year are set forth in detail.

#### Agricultural Exports.

"The abundant supplies of foodstuffs made it possible for the country to meet the greatly increased foreign demand and still to retain enough at home to satisfy the normal domestic needs. It was fortunate for our financial relations that these enormous crops coincided with the breaking out of the war. Last fall the question seriously was raised as to how this Nation could discharge to European creditors its floating obligations, amounting at the time, according to the best estimates, to about \$400,000,000. It was expected that the exportation of manufacturers would decrease, and it was not known that there would be available for export and would be exported such a volume of agricultural commodities. As a matter of fact, between August 1, 1914, and February 1, 1915, the exports were \$1,157,000,000 and the imports \$771,000,000, giving a favorable balance of \$386,000,000. Of the total volume of exports, \$662,000,000 represented agricultural and only \$495,000,000 non-agricultural commodities, chiefly man-

## CHOICE ROSES and other FLOWERING SHRUBS

The planting of ornamentals in the Northwest last year was fully equal to that of fruit trees. Additional thousands of rose plants, deciduous ornamental shrubs, evergreens and shade trees will ornament the farmers' door yards the coming season, for these are being selected to set out this planting season.

**Rose Plants**—Our stock is strong and choice. The hybrid perpetuals are hardy, easily grown and bloom during summer and fall. Among the popular and satisfactory varieties are: American Beauty, pink; Fisher Holmes, deep crimson; Frau Karl Druschki, large, grand white; Jacqueminot, crimson; Hugh Dickson, brilliant crimson; Margaret Dixon, white; Mrs. J. Lang, delicate pink; Ulrich Brunner, rich cherry red.

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ufactures. In the same period for the preceding year there were exported \$638,000,000 worth of nonagricultural and \$722,000,000 of agricultural products, of which cotton alone represented 55 per cent., or \$407,000,000, and all other agricultural commodities, chiefly foodstuffs, only \$315,000,000. On the other hand, from August 1st, 1914, to February 1st, 1915, the cotton exports were only \$168,000,000 and other agricultural products, mainly foodstuffs, \$494,000,000.

"The total agricultural exports in the fiscal year ended June 30, 1915, practically the first year of the war, were \$1,470,000,000, which is an increase of \$356,000,000, or 32 per cent., over those of the preceding year, and of \$433,000,000, or nearly 42 per cent., over the average of the five years 1910-1914.

#### Need for Grades and Standards.

"Among the difficulties of American farmers are lack of familiarity with, and remoteness from the actual machinery of distribution and finance; absence of order or system in the conduct of their own business transactions; inadequacy of storage facilities for their products; and ignor-



One man, alone, can pull any stump that can be pulled by any horse power machine. Merely work a lever and easily pull 48 tons weight—all an inch-steel cable will hold. A mechanical wonder.

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ance of what their products really are in the terms of market phraseology, as well as what they are worth. A producer of a manufactured article knows what it is and what it costs. He knows this better than the buyer. The reverse is true in agriculture. The solution of these difficulties involves a better system of warehouses, with receipts which will be acceptable as collateral; the establishment of standards and grades of grain and cotton and other staple crops; the trading in the market upon standard types or grades, ascertained and fixed by the Government, with such supervision and control over the operation of exchanges as may be essential to secure justice for the producer, the consumer, and the intermediary.

#### Water Power.

"The national forests contain approximately one-half of the water power of the West. The department for nearly a decade has been issuing permits for its development. Unfortunately, the present law does not authorize the granting of permits for fixed periods. It should be amended, and recommendations to this end have been made repeatedly by the department. While authority to grant term permits undoubtedly would aid water-power utilization, the fact remains that development, practically to the extent of the market, actually is now taking place on the forests. In the Western States power development has advanced proportionately very much more rapidly than in the East, where land is privately owned. The amount of water power used in the generation of electricity by public utilities corporations, street railway companies, and municipalities has in the last decade increased 440 per cent. in the West, or more than twice as fast as in the remainder of the country. There, in proportion to population, four and one-half times as much water power is used as in the remainder of the United States, and nearly three times

as much as in the Eastern States.

#### Mining Development.

"The national forests are open to prospecting and the initiation of mineral locations just as is the open public domain. When a mineral claim comes up for patent, it is examined on the ground to discover whether the terms of the mining laws have been complied with. This examination is designed to prevent fraud, and no one with a valid claim need fear it.

"The existence of the forests gives certain advantages to the miner. It is not on the great private timber tracts in the western mountains that the miner is prospecting. It is only on the forests and other public lands open to mineral locations, if he makes a discovery, that he can get title merely through conscientious compliance with the mining laws. Many mines today are securing their timber from the forests, and because of its protection and continued production a steady supply at reasonable rates is assured.

#### The Forests and Recreation.

"The national forests are used also for health and recreation. They embrace the high rugged mountains of the West, the scenery of which is unsurpassed. These great areas are open to the whole Nation. Already more than one and one-half million people visit them annually for recreation, and this number is increasing rapidly as roads and trails are built, making new points accessible. The lands bordering on the hundreds of lakes and streams in the forests offer attractive site for camps and for permanent summer residences. Authority now exists to grant term leases for the erection of summer homes, hotels, and similar buildings, and large numbers will take advantage of this privilege. Public ownership has protected the natural beauty of these areas. Their recreational value has been maintained and increased through road and trail construction and through intelligent study of the needs of the public."

## Farm Finance and Credit

In discussing Rural Credit Legislation at a recent National Conference, Chicago, Myron T. Herrick emphasized the fact that a reformation of farm finance is necessary.

In 1836 a considerable sum of government money was loaned out on farms, but through political changes was improperly handled.

In 1902, the act became a law to use for irrigating projects 95 per cent. of the sum received from arid lands. This strictly speaking can hardly be called government aid except so far as supervision is concerned for the money received from sale of lands has been put back to improve them. But the government made a serious mistake of requiring full payment for the ditches built in 10 years when the time should have been extended at least 30 years. Besides that some of the work was rather costly, though in most cases very substantial. The money expended for irrigation in the west can be repaid within the next 25 years with interest and much taxable wealth produced additional.

In brief, continued Mr. Herrick, my idea of a solution of the land-credit problem is the adoption of the Tor-

rens System, the revision of the foreclosure laws, wherever necessary, and the enactment of general permissive laws on bond-and-mortgage companies and landschafts. The landschafts are a subject for state legislation only. Both the nation and the states, however, might enact laws for companies. The laws of the states ought to be uniform so as to standardize bonds, debentures, and mortgages. The only kind of inspection or government intervention needed is that which are now provided for banks. The only regulations and restrictions should be those that would safeguard borrowers from oppression and investors from fraud and recklessness. This done, I believe that it would be possible to undertake the great enterprise of converting the \$2,000,000,000 of farm mortgages which now exist into long-term loans, and that a flow of money could be directed to the land in sufficient volume and at fair interest rates to supply the needs of the landowners.

#### Organization and System Required.

The solution of the land-credit problem cannot, however, remove all the difficulties that surround agriculture. The chief trouble with American agri-

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culture is lack of organization. Aside from some notable exception in fruit and dairy regions, the farmers are not organized either industrially, commercially, or financially. They have no collective purchasing, marketing, or banking systems of their own. Each farmer relies upon himself for what he buys, sells, or borrows. As a consequence there are wastages and losses that seriously affect both producer and consumer, while the individual farmer is left at the mercy of any unconscientious person who wishes to exploit the exigency of his affairs. Particularly is this so where he has urgent need of money. The American farmers are unexcelled in capacity, intelligence, and education; and they possess in fertile lands, natural resources, personal qualifications, material conditions, and in all other respects everything that makes for agricultural prosperity, except organization. Moreover, they are the richest farmers in the world; their wealth in the aggregate and their combined earning power are almost beyond comparison.

The American farmers perhaps own forty-five billion dollars of property and this year raised twelve billion dollars of products. Nevertheless, they remain unorganized and allow this stupendous wealth and income, upon which the very existence of the Nation depend, to lie scattered for all who wish to pick a profit from them. Practically no animal or vegetable product reaches the market, without some unnecessary sum abstracted from the producer's or added at the consumer's end of the deal, and the proceeds that are finally returned to the farmer are usually placed in some commercial bank to be used in industries other than agriculture. Since organization is the only thing the American farmers lack, it is this shortcoming that may logically be assigned as the cause of their troubles and distresses, their complaints against bankers and merchants, and their demands upon government for state aid. Unorganized farmers always have been and will be victimized and made the prey of their own necessities. But organized farmers are able to take care of themselves; and this would surely be the case with American farmers, because they own and produce more than enough to make them absolutely independent and self-sustaining if they only would utilize it.

#### Associations for Farmers' Profits.

The farmers in the United States ought to be organized from the plains to tidewater; but if they should attempt to do so, they would encounter legal obstacles, since the laws have not been framed with a view to agricultural organization. The only ways by which two or more persons can unite for an economic object are the partnership, the corporation, and the association. A partnership is not intended for a numerous, and fluctuating partnership, and so is of little use for farmers. A corporation is a joint-stock company with a capital stock that is fixed by the charter, paid in at the start, and voted by the stockholders according to their shares, but owned by the company itself. As a great jurist once said, a corporation may be formed without a body to be kicked or soul to be damned. Its prime purpose is the employment of capital and labor for paying dividends to investors. Manifestly it

is not intended for use where the capitalists, laborers, and investors are identical persons, as would be the case with organized farmers.

An association is a voluntary union of persons under a plan that preserves the equality and personal responsibility of members. Usually a member has only one vote, and this cannot be cast by proxy. The liability assumed by members may be limited, unlimited, or contributory. Shares may or may not be issued. If issued, they are simply certificates of deposit on which the credits may be withdrawn upon notice by holders. So the fund thus accumulated differs from the capital stock of a corporation in that it is variable and is owned not by the association but by the contributing members. The shares may be paid in installments. Consequently, while a corporation cannot begin without money an association can begin practically without a cent. It is because no money need be put up at the start and because all money put in is withdrawable that an association is more attractive than a corporation to small investors. Moreover, the personal responsibility of the members and their direct participation in the management make the association peculiarly adaptable for those mutual relations and practices that constitute what is called co-operation.

#### New Laws for Associations.

For these reasons the association is the best form of organization for farmers. There is no kind of business or finance that could not be conducted through an association, provided the members reside close enough to its headquarters to take part in its affairs, but legislators have not yet realized this fact. The association has been legalized for savings banking, life insurance, the building-and-loan idea and for a few other purposes; and in every instance it has proved entirely safe and wonderfully effective. The world would be all the better, if the associational form and practices were more extensively adopted for economic objects; but generally speaking, the association has been relegated in the United States to social, religious, eleemosynary, educational, thrift, and non-profit uses. Nearly every state (it is true) has a law on co-operative associations or societies, but the majority of these laws were framed on the postulate that the association cannot be used for profit making, and that co-operation is a benevolent or altruistic means for encouraging brotherly love among poor and incompetent persons.

This pitifully wrong idea has been written into the recently enacted laws on the so-called credit unions or co-operative credit associations in Massachusetts, New York, North Carolina, Oregon, the Philippine Islands, Rhode Island, South Carolina, Texas, Utah, and Wisconsin. The error is responsible for the tax exemptions, the limitation of the interest rate on deposits or of dividends, and the various restrictions that made those concerns worthless for farmers. Owing to these misconceptions about co-operation and to the failure to grasp the fact that co-operation works best through the association, the progress of agricultural organization has been retarded in spite of all the efforts that have been made for it during the past five years. A co-operative association may be defined as a voluntary

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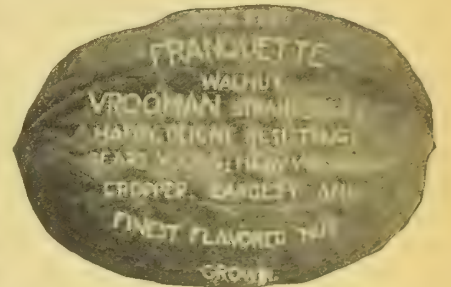
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#### Pierce County Rural Development Co.

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Mention the Horticulturist



union of persons for utilizing their collective energies or resources, or a part of them, under their own management in some economic enterprise carried on upon their common account with a view to their mutual and individual benefit. A co-operative bank is an association with full banking powers that confines its credit facilities to members.

It would be well for the states to recast their laws on co-operation and to enact new laws for economic associations and associational banks. Co-operation exists in such great variety that its definition is exceedingly difficult, so the word and its derivatives might be excluded from the statutes, except in the titles. Their absence would occasion no harm, because the practice of co-operation is automatic in a properly formed association. There is no European law that can serve as a model. We shall have to create anew. The American laws should provide for all forms of associations and permit their use for any kind of business or finance, banking included. Moreover, the Sherman Act should be amended so as to permit combinations for agriculture, small industries, and the like. This is especially necessary for farmers, because agricultural organization depends upon the formation of systems of interrelated associations. But in all other respects the laws should be free of class legislation, special privilege and tax exemptions and should also be available for all. The workmen, tradesman, and small industrial is as much in need of co-operation as the farmer. I submit the following program:

#### The Help Necessary for Self Help.

An amendment of the National Banking Act so as to permit a national bank that confines its credit facilities to members to be organized as an association without capital stock.

An amendment of the banking act of each state so as to permit any kind of bank that confines its credit facilities to members to be organized as an association without capital stock.

An enabling and regulatory law by the nation and by each state legalizing for economic associations whatever is lawful for corporations.

A clause in such laws to permit combination among farmers' associations and associational banks, among associations organized for selling food and household supplies to members, and among associations organized by artisans for buying on their common account the materials needed in their work or for selling their products.

Legislation along these lines is all that is necessary for co-operation. After it had once been enacted, farmers, tradespeople, small producers and small consumers would here and there avail themselves of it. Their success would encourage others; and then gradually, but with ever increasing speed, co-operation would spread in town and country throughout the land, just as was the case in Germany, Italy, France, and elsewhere after the laws on associations were put on the statute books. If societies or boards of earnest propagandists were formed to lend a hand, they could materially help the good work along. But it should always be borne in mind that co-operation rests upon the individual

initiative and mutual self-help of the persons to be benefited, and that charity, state aid, or extraneous assistance of any sort would impair its effect. The fact should also be kept in mind that the agricultural associations should combine. Detached and isolated agricultural associations could be only partly successful. The farmers ought to form great decentralized systems of interrelated national, departmental, state, regional, and local association.

The growth, however, should be not from the top downward, but from the ground, laterally and upward. Nothing should be forced or artificially hastened. The development should be natural and orderly, and each system should be based on local rural co-operative banks. The first step towards agricultural organization is the formation of these basis units. We all know what these wonderful little concerns are, so there is no need of discussing details here. They may adopt any of the associational forms. The investigation and study that I have made lead me, however, to favor the Raiffeisen society which localizes its operations to a small area, confines membership to mutual acquaintances, and imposes unlimited liability. It does not issue shares nor distribute dividends. Its aim is economy rather than gain. It limits profit-taking to its actual necessities and carries net earnings to an indivisible reserve. This reserve thus slowly accumulated takes the place of the capital stock and guaranty fund of a corporation, protects members from liabilities, assures the financial standing of the association, and makes it a permanent institution in the neighborhood. This type of associational bank is the best ever devised for stabilizing the rural population, for vitalizing the spirit of co-operation and for enabling farmers to utilize their credit and other resources for their agricultural purposes. In my opinion the closer rural organization adheres to the principles and practices of Raiffeisen, the more effective and lasting it will be.

#### TARIFF LEAGUE AT WORK.

It is the purpose of the Tariff League to bring all possible pressure to bear upon Congress to create a Tariff Commission, and it is receiving the co-operation of some of the most influential organizations in the country, notably the United States Chamber of Commerce and organized labor. The agricultural organizations and publishers of farm papers, so far as heard from, are practically a unit for the general plan. The League insists that tariffs shall be made upon facts instead of fancies, that log-rolling, trading and lobbying shall cease, and that the tariff shall be made for all the people instead of some of the people. One of the most significant features is that the bill that is proposed requires that the President shall recognize both agriculture and labor in the creation of the proposed Commission. Hitherto manufacturers have felt that the tariff was their especial province and that it was a "business proposition," in which their advice should be followed. The League insists that the tariff shall take into account every interest and that those of agriculture and labor should receive as careful consideration as manufacturers.

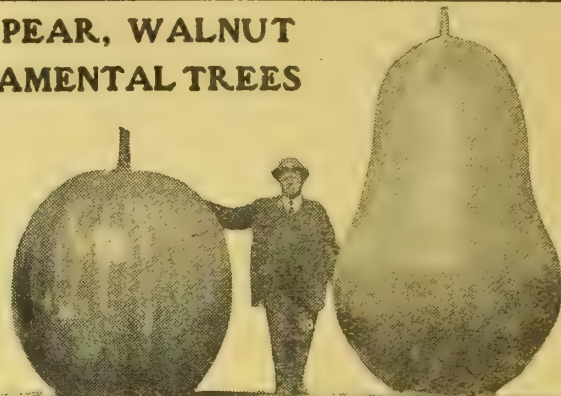
## MONTE VISTA NURSERIES

**PEAR TREES**—We have some very choice pear trees in both 1 and 2-year stock of the following varieties: Anjou, Bartlett, Comice, W. Nellis, P. Barry.

**APPLE TREES**—Very fine Jonathans, Rome Beauty, N. Spy, Newtown, Baldwin, Ortley, Winter Banana, King, Waxen, Gravenstein and Red Astrachan. Write for prices.

**A. HOLADAY SCAPPOOSE, OREGON**

### PLANT PEAR, WALNUT and ORNAMENTAL TREES



**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
*C.F. Lansing, Prop. Salem Ore.*

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

### CATALOG AND GUIDE BOOK ON ORNAMENTAL PLANTING FREE

Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,

**J. B. PILKINGTON, Nurseryman**  
Portland, Ore.

## CHOICE ORNAMENTAL PLANTS

Flowering Shrubs of every description. Evergreens of all classes including Japanese and European selections. Choice standard Roses and newest varieties, vigorous stock. Fruit Trees at bargain prices. Send for list today.

### PUGET SOUND NURSERY & SEED CO.

1626 4th Ave., Seattle, Wash.

## Bearing Size Apple Trees

We have some fine 4-year-old apple trees in Wealthy, Wagner, Grimes, Jonathan, etc., which have been frequently transplanted and will bear early when set out. Many of them have borne fruit in the nursery row.

We also have a choice selection of ornamentals including: Roses, Peonies, Delphinium, Daisies, Dahlias, Gladiolus, Tulips, Hyacinths, Lilacs, Spireas, Snowballs, Hydrangeas, Hollies, Cypress and other Evergreens.

Write for price list today.

### MITCHELL NURSERY CO.

Larchmont Station.

Tacoma, Wash.

## Ground Limestone

Thousands of farmers in the Coast Section of the Pacific Northwest are preparing to buy ground limestone, to be spread over their lands during the rainy season. This basic element of soil fertility is now put on the market at prices within reach of all producers.

Freight rates for delivery in car or ton lots are being arranged. Those preparing to buy will please give name of their local station, the amount of lime required, when writing to ascertain cost delivered.

Washington Portland Cement Co.

White Bldg.

Seattle, Wash.



It is distinctly a people's movement and there is practically a country-wide demand that everyone should get back of it and insist that members of Congress shall promptly enact the necessary legislation.

## RURAL CO-OPERATIVE SYSTEMS

### Their Successes and Failures.

(Milliard R. Myers, Editor American Co-operative Journal, before National Conference on Marketing and Farm Credits. Assembly at Chicago.)

Speaking of the Grange, the Farmers' Alliance, the Gleaners, the American Society of Equity, the Farmers' Grain Elevator movement and the California Fruit Growers' Exchange, Mr. Myers said, all had been more or less successful; when they failed it had been due to lack of money, lack of proper ideals and leadership or lack of economic necessity. He said in part:

"The Grange Store Movement failed because the farmers were poor business men and could not effect the savings which they expected to make. The Grange still exists, but has not an economic force. The Grange halls, once devoted to a study of economics, are now club rooms and their purpose and intention is ethic more than economic.

"The Alliance lost itself in politics.

"The American Society of Equity started on the theory that the law of supply and demand could be controlled by the farmers. They achieved more or less success in their effort to control the price of beans, peanuts and tobacco. Their effort to control wheat and cotton was a failure. At one time they claimed a membership of 100,000 farmers who were holding their wheat for \$1 a bushel. The crop never went to \$1 a bushel because the demand was not enough to put it there, and the theory of overcoming the law of supply and demand failed, as it always must.

"Following this failure, the leaders fell to fighting among themselves, slander suits were instituted and the promising society temporarily went to pieces. A few leaders proceeded, and today the outgrowth of these early beginnings is felt in North Dakota, Wisconsin and Kentucky, but the ideals have changed. They are merchandising grain, live stock and other products in keeping with their efforts.

"The Farmers' Elevator Movement was based upon a fight to gain three to ten cents a bushel more for grain at loading stations. The leaders did not know anything about true co-operation, as was the case of most other societies started ten years ago in this country. They simply called the farmers together, told them they were being robbed and got them to build their own warehouses.

"Three thousand warehouses are now owned by farmers. Each society is a law unto itself; some of them co-operative, many of them not. They were instituted to make a market and filled the purpose of the hour without a knowledge of co-operation.

"The California Fruit Growers have been organized in much the same way and have made their own laws and been controlled by wise leadership. They are marketing most of

the fruit of California and are worthy of imitation.

Corporation Differing

from Co-operation.

"The future of all societies endeavoring to serve the producer, in my opinion, will depend upon the application of the co-operative principle.

"The corporate idea tends to center itself in the hands of a few men to work for dividends and to lose its purpose, namely, to make a market.

"The co-operative principle tends to make everybody a shareholder, to keep down the profits and to pay the highest market price for the produce. Expressed in ultimates, a corporation tends to monopoly and co-operation to democracy. A corporation enhances private profits to the highest degree, co-operation eliminates private profit and renders service at the cost of service.

"The principle that has gone the farthest and done the most good, and demonstrated beyond the question of a doubt its ability to compete with big business and to perpetuate itself from generation to generation is the Rochdale plan. This plan is very simple. Any child can understand it, and a "way-faring though a fool" can apply it. Simply stated, it provides first, every possible customer may become a shareholder. Second, each shareholder shall have one vote. Third, interest should be paid on money invested. Fourth, the remaining surplus shall be divided on the basis of patronage. Commonly stated, interest on money and dividends on trade.

"American co-operation must be based on limited liability, inasmuch as our American communities are not willing to risk their entire fortunes for the good of the community.

"The co-operative system has many advantages. It is democratic to begin with. It is free from state aid or political control or interference. It allows the future action of the law of supply and demand. It standardizes farmers' products, it prevents waste, it avoids unnecessary handling, it increases production, it improves the grades of produce. It increases the net income to farmers and decreases the cost to the consumer. It allows the future working of the law of supply and demand. It encourages competition. It increases initiative and compels an agricultural leadership."

### WHEAT GUIDE BOOK.

A farmer's guide book to enable him to distinguish the different varieties of hard spring wheat, both common and durum, is published by the United States Department of Agriculture as Farmers' Bulletin No. 680. The purpose of the bulletin is to help wheat growers test their varieties, and more especially to enable them to keep their seed pure and free from crosses which will lessen its value. As a sample the bulletin gives this advice for distinguishing common and durum wheats, which holds true for most common wheats grown in the durum wheat district, though not entirely applicable to some of the common wheats grown elsewhere in the United States and in foreign countries.

#### Common Wheat.

Heads rather slender, beardless or beards less than 3 inches long; spikelets far apart, scarcely overlapping, wide when seen in face view.

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

**OREGON NURSERY CO.**  
ORENCO, OREGON

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously

**YOUR FRUIT, POULTRY AND EGGS.**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation. 923-5 Railroad Avenue, CHAS. UHDEM, Spokane, Wash.

## The Puyallup Nursery

Hardy Ornamental Nursery Stock a Specialty

Large stock of Ornamental Evergreen Shrubs and Trees propagated on our own grounds. Make your own selections. Rose Bushes, fine assortment in two-year and three-year sizes. Berry Plants of all kinds. Send for price list.

Specimen Grounds, 702 Pioneer Avenue, East

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Send for Lubrication Instruction Chart, specifying make and model of your car. Free.

## ZEROLENE

*the Standard Oil for Motor Cars*

**STANDARD OIL COMPANY**  
(California)  
Tacoma

## PEAR TREES

Best commercial varieties for Pacific Coast section, choice stock in 1 to 3 years of age and good grades.

Also Plum and Prune trees of the leading marketable varieties. English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

**J. W. STEHENS**  
Kelso, Wash.

## Walnut Trees

Franquette and San Jose Mayette

Grafted on California Black Walnut roots our specialty. Sizes 4 to 10 feet. Prices reasonable. We grow our own trees. Scions selected from our walnut grove. Send for our folder on the Care of Walnuts.

**SUNSET NURSERY.** 525 West San Carlos St. **SAN JOSE, CAL.**

## ROSES-EVERGREENS-VINES

100 choice varieties of the kinds best adapted to the Pacific Northwest. First class stock and satisfaction guaranteed. Many rare varieties. Send for list today.

**WHITNEY NURSERIES**

3846 34th Ave. West.

**SEATTLE, WASH.**



**Durum Wheat.**

Heads rather stout, all bearded, beards 4 to 8 inches long; spikelets close together, much overlapping, narrow when seen in face view.

The bulletin also contain diagrams and maps showing the relative yields in the States of the Great Plains area secured from hard winter wheat, durum, fife, Preston and bluestem, together with descriptions and discussions of the various groups of wheat.

**CO-OPERATION BASED ON NECESSITY.**

There is much educational discussion of rural credits and co-operation, to fit the needs of farmers, going on at the present time. The sum and substance of this matter is well summed up by I. D. O'Donnell, Supervisor of Irrigation, in a recent number of Reclamation Record:

"The co-operative spirit is not merely a desire to accept the benefits of co-operation, but rather a willingness and a desire to sink individual opinions and interests to such an extent that the individual may work with others for the common interests.

If the farmers of this country expect to secure legislation or to bring about conditions which will place them on an equality in the business world with other industries, it is necessary for them to decide for themselves what they need, and then to produce the required legislation and bring about the desired conditions by their own force.

"Rural credits and farm loans are already being made the stock in trade of politicians who do not have at heart the interests of the farmer. Organizations composed of men or actuated by men whose financial gains depend upon making dupes of the farmers are now holding conventions and proposing legislation to mislead the farmer. These conditions will grow and become more unsatisfactory as the farmers' fight for commercial equality makes headway. The problem of getting better conditions for the farmer is one for the farmer to work out. It is his fight. When the necessity for changes becomes so pressing as to force the farmers to stand together, we may expect progress. People do not do of choice what they must do of necessity."

**IRRIGATION**

**Adequate, available moisture at all seasons.**

**CORN SHOWS**

Corn shows are being boosted by the Union Pacific Railway System in the Pacific Northwest for the reason that its officers have observed that wherever corn can be grown as successfully as in the irrigated sections that it is a leader as a wealth producer.

Some of the suggestions by Mr. C. L. Smith, representing this company, are:

The corn plant will produce the largest amount of feed per acre of any plant grown.

It is the best and cheapest feed to make a balanced ration with alfalfa.

It is one of the best crops to grow in rotation with grain, grass and root crops.

It will profitably utilize a larger measure of stable manure than any other crop.

When the ground is properly prepared and the crop cultivated as it should be, it is more profitable and satisfactory in cleaning a field from weeds than summer fallow.

It is a most economical and satisfactory crop to grow for a green feed to supplement dry pastures in July, August and September.

An acre of corn will produce more and better silage than any other crop.

Good, well grown, properly cured corn silage, to the amount of one-half the daily ration, is one of the best known feeds for dairy cows, young growing stock or fattening steers.

**DIVERSIFIED FARMING AT GRANDVIEW.**

Mr. F. A. Norton of Grandview, Wash., according to the Reclamation Record, is one of the progressive and successful farmers of the Yakima Valley. He owns 20 acres and rents 20 acres adjoining, the larger portion being planted to fruit trees, between the rows of which he practices diversified farming, growing alfalfa, corn, melons, potatoes, and various root and truck crops.

Mr. Norton is enthusiastic over the possibilities of the Yakima Valley for the poultry business, giving his reason that it has advantages over the Eastern States of cheaper feed and milder climate, and over the Middle States of milder climate and higher prices for poultry products. In 1914, from 450 hens, he made gross sales amounting to \$1,100, of which slightly over one-half was net profit above the cost of feed. As he grows two-thirds of his feed on the farm, the actual cash outlay for feed is small. This year he has 600 hens and estimates that the income from them will be in excess of \$1,500. Three hundred of his hens are running in alfalfa pasture with a stack of wheat hay; the balance he keeps penned, feeding alfalfa and kale during the summer and fall, with carrots, mangels, and rutabagas for green feed during the winter. Rutabagas are grown as a second crop following potatoes, and the mangels produce from 15 to 20 tons of very cheap feed to the acre. For a grain, Mr. Norton grows wheat, beardless barley, or millet, feeding on the straw exclusively.

**HOGGING OFF PEAS.**

R. D. Lewis, one of the enterprising farmers on the Tieton irrigation unit, made a demonstration in hogging off peas in the orchard which is of interest.

A three-acre orchard was sown with Canadian field peas last spring, ready for the hogs September 2nd. He had 67 Durocs, average initial weight each 44.9 lbs. A pannel fence made at a cost of 40 cents per rod was used, and moved, allowing small lots of peas at a time. The feeding period lasted 32 days and the average gain for each hog was 22 lbs. Figuring the value at 5½ cents per pound there was a gain in value per hog of \$1.21 or a total of \$81.36 for the entire lot of 67 head. The actual ground covered with peas exclusive of that

**Plant Ornamental Trees**

Many farmers are now planting increasingly of ornamental trees and flowering shrubs thus making their homes more beautiful and valuable. Their selections include Hardy Hydrangeas, one of the most attractive fall flowering shrubs, Dogwood, some varieties of which bloom both spring and fall, Japanese Quince, the earliest to flower in spring; Lilacs, Snowballs, Spirea and the various climbing plants to cover old buildings or unsightly objects about the homestead.

We can send many of these by parcel post. Write for our catalog and prices today, for full description of trees and plants.

**YAKIMA & COLUMBIA RIVER NURSERY COMPANY**

North Yakima, Wash.

**PORTLAND WHOLESALE NURSERY COMPANY**

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

**SPECIALTIES**

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.

**Walnuts Are Dollars**

Plant a Walnut Grove that will grow into Dollars while you sleep. The Vrooman Franquette bears at three years and sells for 25 cents per pound—is smaller than an apple and sells for more money. Get in with the tide, and get rich. At forty feet apart, it only takes 28 trees to the acre. Is cheaper than an apple orchard to plant, and makes your land more valuable. True Vrooman Franquette Walnut Trees at Bargain Prices at

**Mira Monte Nursery**

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**Christopher Nurseries**

Wholesale and Retail

Nurserymen for Four Generations; 25 Years in Present Location

From this experience we are producing stock which afford planters the very highest measure of satisfaction: carefully grown, free from disease.

Varieties complete of **APPLES, PEARS, CHERRIES, PLUMS, PEUNES**, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

**ORNAMENTALS**—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce, Retinosporas, Cypress.

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Our success in the Alfalfa seed game has astonished the most skeptical. We were advised that clean, reliable seed could not be furnished in quantity. We found that it could be, if the dealers would go to the expense of inspecting the seed fields before they were harvested. We do this thing and therefore know what we are serving is right. If it is not right then we are to blame and are going to make it right.

We have seed for sale in quantities from 1-lb. to car lots. It is the 1915 crop—the best to be had at any price, anywhere. We have no bargains to offer you, but if you are interested to the extent that you want good seed at honest prices, we are on the job to the finish. For prices, samples, etc., wire or write,

**V. A. PETERSON ALFALFA SEED CO.**  
Arbuckle, Calif.

**THE ONLY EXCLUSIVE ALFALFA SEED DEALERS IN THE WEST**

**Ornamental Plants Shrubs and Trees**

Send for our illustrated catalog and price list of roses, flowering shrubs, shade ornamentals and fruit trees. We carry a complete line and can fill your order promptly. Our fruit trees cannot be surpassed, nor the price equalled.

Order now. Fall is the best time to plant.

**ORNAMENTAL FRUIT & NURSERY CO.**  
Wapato, Wash.



occupied by the trees was 2.2 acres. The return per acre therefore was \$36.98 besides the value of the nitrogen fertility added to the soil. Raising peas in the orchard and hogging off paid in this demonstration.

### BENTON COUNTY CORN.

Benton County, Washington, is becoming noted for its hogs and corn, a tribute to the skillful irrigators. The farmers in the lower Yakima Valley by means of irrigation produced an average yield of 70 bushels corn per acre compared with an average yield of 35 bushels per acre in states east where there is no irrigation.

Alfalfa, corn and Duroc hogs in the diversified farming program of the Benton County farmer cannot fail to afford a high measure of prosperity, and irrigation is the sure basis on which their industrial structures are erected.

### KEEP ON WITH HOGS.

The hog raisers in the irrigated districts are inclined to get cold feet because market prices have dropped from 8 to 6 cents per pound live weight. Years ago the Iowa farmer thought he was doing well to get 4 cents per pound, and his corn didn't average 70 bushels per acre nor did he produce any alfalfa.

Farmers in Benton County, Washington, and others who have like favorable conditions, should stay with the hog raising game if that is their play. There is no merit in the plan if going into and out of stock work in an effort to out guess market conditions, says Mr. O'Donnell, in the Reclamation Record. A disadvantage of this plan is that any break in the handling of stock is a serious setback in the unbuilding of the farm droves and herds, and it fails to bring returns for the money invested in buildings and equipment year after year. Another condition is that the farmer is rarely able to "guess" when he should go into and out of the business, and the result is he is usually out when he should be in. If you are going to handle live stock, make a permanent and continuous business. Use good judgment in what you feed and when you feed it, but keep ever-lastingly with the live stock and you will profit.

It is an accepted fact that with alfalfa pasture as a basis for hog feeding and with the addition of small grain or corn in amounts to suit the particular period of the feeding that good pork is produced cheaply.

Numerous tests have been made under all ordinary conditions, and the returns to be had from alfalfa pasture through pork range from \$20 to above \$80 per acre after full allowance at market price has been made for all grain fed. This is a good return when it is considered that the hogs do the work.

Following up these experiments tests are now being made in running hogs on alfalfa pasture and requiring them to harvest in addition their own small grain or corn. The present status of these experiments tends to show that the hog has no objection to acting as a grain harvester or corn husker, and the farmer will save what he has heretofore spent in shucking corn and thrashing grain for hogs.

Year after year hogs have heretofore returned profits to the farmers

under conditions not nearly so favorable as our farmers may now take advantage of. There is no reason why our farmers should let up in hog raising or feeding. The returns and profits will be in accordance with the skill and knowledge applied, and continued through a series of years.

### GOVERNMENT CO-OPERATION

In Australia the government borrows money at 4 per cent. to build irrigating ditches, level the land and build houses. The farmer who buys makes only a payment on the land equal to 3 per cent., and 40 per cent. of the value of the improvements. He is then given 36½ years to make the balance payments on which he is charged 4½ per cent. interest. By this method the government does not lose a cent nor does the system cost tax payers anything.

By this method the farmer as a beginner has some chance of making a living from the very start. Dr. Elwood Mead, of California, who has studied the Australian method states it has stopped the drift of the young men from the country and attracted to the land scores of young men from the cities. It has created opportunities for hundreds of poor men who without it would have never been landowners. Under its operations more than four thousand farmers, all starting with limited capital, now live in their own houses and are landed proprietors. It has given the people better houses at less cost, better livestock, better tools than they could have obtained without the financial aid and the expert knowledge and advice that went with the system.

The government's plan also provides for the placing of a practical farm instructor over every area of 20,000 acres or less.

"The reason why the state can do this successfully and the reason why private or co-operative effort cannot, is that the basis for this action is the general welfare and not profit. It is the creation of better conditions in rural life, the bringing into cultivation of unoccupied land, increase in production and taxes. All these things are gains to the public of which the state is the representative. They can not be shared in by any private undertaking. The government and the several states own much of the land to be peopled; they have already organized in the state experiment stations and under the Smith-Lever Bill the agencies to supervise this development; and to advise and direct the settler. All they need is to be extended; this is far better than their duplication.

"In adopting this system we have abundant precedent to guide us. We do not have to break any new trails. It is entrusting the creation of new communities to the only authority which should exercise this power and the only one that has the resources, the continuity of existence and the disinterestedness needed to insure the results desired. If we adopt this policy and place around it the safeguards that have made the Australian system so conspicuous a success, or those incorporated in the British Columbian law, or outlined in the report of the Wisconsin State Board of Public Affairs, there need be no misgivings as to the results," says Dr. Elwood Mead.

## For Those Who Want Reliable Power and Service

Price is a secondary consideration in buying a farm Engine. What you want to know is "HOW LONG WILL IT LAST?" and "CAN I DEPEND ON IT?"

When you buy an

### Alpha Engine

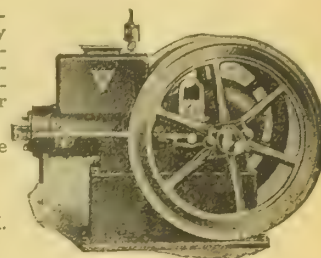
You get a reliable power unit that will give you long and satisfactory service

#### Gasoline-Kerosene or Distillate

There are more drop-forged and case-hardened parts on the Alpha Engine than any other. Semi-steel cylinders and piston accurately ground to size. This means sustained power and an engine accurate in adjustment and therefore as economical after five years' use as when new.

THE VIKING ROTARY PUMP will reduce your cost of irrigation. High efficiency. Self-priming. Requires no foot valve or priming pump. All sizes from 5 G. P. M. to 1600 G. P. M.

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## De Laval Dairy Supply Co.

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Kirstin One-Man Stump Pullers are Used and Recommended by the U. S. Government.

Uncle Sam has tried the rest. Now he is using the BEST. California Forest Supervisor says, "The KIRSTIN is doing good work and I am well pleased with the investment as it has MORE than paid for ITSELF in labor saved already."

N. H. Sloane, U. S. Forest Supervisor The U. S. Government and Hundreds of Progressive Farmers all over the country are getting this same satisfaction and that is why we can sell on

THIRTY DAYS FREE TRIAL We are the Largest Exclusive Makers of Hand Power Stump Pullers in the World

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There are more KIRSTINS in actual use than ALL the other makes combined—that is why we can give a

TEN YEAR GUARANTEE Every KIRSTIN is absolutely insured for TEN YEARS, the first cost is the LAST. NO EXTRA PARTS TO BUY. That is not all, we offer you a

SHARE IN OUR PROFITS My FREE book explains all and shows my new 1916 Models. I am making an unusual offer to get new KIRSTINS working. Write for my Free Trial offer and

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with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2½ gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

## AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

## Milton Nursery Co.

### WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

## Milton Nursery Company, Inc.

Milton, Oregon

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. THOMPSON

### CHRISTMAS GREETING

Christmas is here  
Merry old Christmas  
Gift bearing  
Heart touching  
Joy bringing Christmas;  
Day of grand memories,  
King of the year.

### GIVING AND LIVING.

He is dead whose hand is not open wide  
To help the need of a human brother;  
He doubles the length of his lifelong ride  
Who of his fortunes gives to another;  
And a thousand million lives are his  
Who carries the world in his sympathies.  
To deny  
Is to die.

Forever the sun is pouring its gold  
On a hundred worlds that beg and borrow;  
His warmth he squanders on cold,  
His wealth on the homes of want and sorrow.  
To give  
Is to live.

—Selected.

### THE GIFT CHRIST BESTOWS.

It is one of the commonplaces of Christmas musing that Jesus never gave any gifts that cost money. Christmas is the birthday of One "who never gave the world a dollar." If we except the provision on two occasions for the hungry multitudes, Jesus bestowed nothing material upon men. He of all men had the unlimited power to bestow upon his friends what he knew was best for them. Yet he gave them nothing—so far as we know—like the typical Christmas presents of our day. He was always giving, but his gifts were spiritual in nature, not material.

He performed kind deeds—he went about doing good. He literally poured upon men the gifts of the Spirit. "My peace I give unto you." "I will give you rest." "Thy sins be forgiven thee." "Take faith in God." His very words are treasured as the most priceless possessions of the race; as Madame de Stael puts it, "If the Foun-

der of Christianity had done no more than to say, 'Our Father who art in heaven,' he would have conferred an inestimable boon upon the children of men." But after all the primal gift of Jesus was something greater than these things we have mentioned. The gift of Jesus is Jesus himself. He in his own person is The Unspeakable Gift. The gift which gave all its meaning to the first Christmas day was precisely this: the bestowal of a Personality. What Jesus gave the world was "the Human Life of God."

If that is the chief meaning of the first Christmas day it should be our outstanding thought in regard to every Christmas day. So marvelous are the possibilities unlocked by the fact that "the Word became flesh," that it now rests with us to say whether or not within our circle each recurring Christmas shall mean the bestowal of the spiritual gifts of God. We may now receive more of the life of God for ourselves and may pass on more of that same life to others if we will. This is the "keeping of Christmas" into which everyone can enter. The giving of the best gifts is absolutely independent of our wealth or poverty. Men who have no silver or gold may spread their gifts as far as they who have unmeasured wealth—ever farther, if we may judge by the poor givers of those things which have most blessed the world. Man may give, in his measure, some of the things which Jesus gave. But, best of all, any personality may be what Jesus was—a gift.—Ex.

### CHRISTMAS MENU.

|                                               |                 |
|-----------------------------------------------|-----------------|
| Grace                                         |                 |
| Conscience, Clear                             |                 |
| Kindness                                      | Good Cheer      |
|                                               | Tender Memories |
| Charity, served with Discretion               |                 |
| Peace                                         | Love Truth      |
| Long Life, stuffed with Usefulness            |                 |
| Heart, Fond and True, A Large Portion         |                 |
| Affection                                     | Happiness       |
|                                               | Sweet Thoughts  |
| Best Wishes for Absent Friends                |                 |
| Mizpah                                        |                 |
| "Not what we give, but what we share,—        |                 |
| For the gift without the giver is bare;       |                 |
| Who gives himself with his alms feeds three,— |                 |
| Himself, his hungering neighbor, and me."     |                 |

—Selected.

### KITCHEN RECIPES.

#### Butterless—Milkless—Eggless Cake.

$\frac{3}{4}$  cupful Crisco, 2 cupfuls brown sugar, 2 cupfuls water, 1 cupful seeded raisins, 1 teaspoonful salt, 2 teaspoonfuls powdered cinnamon, 1 teaspoonful powdered cloves,  $\frac{1}{2}$  teaspoonful nutmeg,  $\frac{1}{2}$  teaspoonful powdered mace, 2 teaspoonfuls baking soda, 4 cupfuls flour, 1 teaspoonful baking powder,  $\frac{3}{4}$  cupful chopped nut meats, 3 tablespoonfuls warm water.

Put the Crisco into a saucepan, add sugar, water, raisins, salt and spices, and boil for three minutes. Cool and when cold add the flour, baking powder, soda dissolved in the warm water and the nut meats. Mix and turn into a Criscoed and floured cake tin



# Olympic

## WHEAT HEARTS

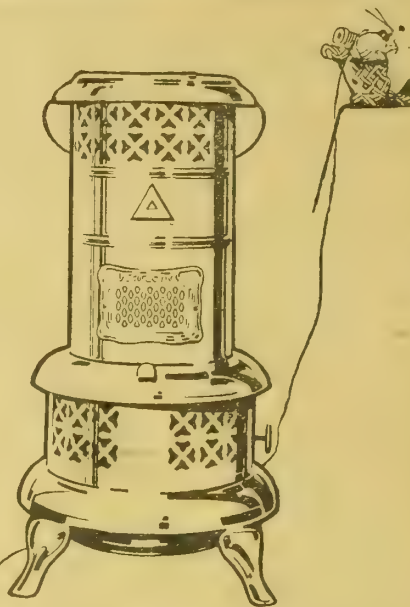
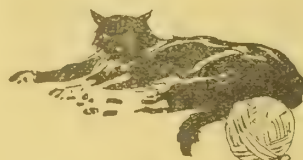
The little hearts of Wheat A tempting breakfast dish, easily cooked, pound cartons.

Sold by all Grocers.

The Puget Sound Flouring Mills Co.

Tacoma, Wash.

Rx  
for cold  
and dampness



## Perfection Oil Heater

A sure remedy for the cold, damp days. Inexpensive to operate—easily carried from room to room. Smokeless and odorless. Dealers everywhere.

For best results use Pearl Oil

## Standard Oil Company

(California)  
Tacoma



### Sunshine Lamp 300 Candle Power

FREE

To Try In Your Own Home  
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

**COSTS 1 CENT A NIGHT**

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL REFERRAL OFFER. Write today. AGENTS WANTED.

SUNSHINE SAFETY LAMP CO.  
605 Factory Bldg., Kansas City, Mo.



and bake in a slow oven for one and a half hours.—Mrs. Vaughn.

#### Pumpkin Pie.

$\frac{3}{4}$  cup sugar, 1 tablespoon flour,  $\frac{1}{2}$  teaspoon salt,  $\frac{1}{2}$  teaspoon cinnamon,  $\frac{1}{4}$  teaspoon nutmeg and cloves together.  $\frac{1}{4}$  teaspoon ginger,  $1\frac{1}{2}$  cups pumpkin, 2 eggs, 1 cup hot milk, 1 tablespoon melted butter.

Sift dry ingredients into the pumpkin, add eggs beaten light, hot milk and melted butter. Line a deep pie tin with paste, brush over with melted butter to prevent crust becoming soggy, and pour in the pumpkin mixture. Bake in a medium oven about 35 minutes.

#### Marshmallow Teas.

Arrange marshmallows on thin unsweetened round wafer crackers, allowing one marshmallow to each wafer. Make a deep impression in the center of each marshmallow, and in each cavity drop one-fourth teaspoonful of butter. Arrange on a baking sheet and bake until marshmal-

## Sleep well on a Heywood Mattress



When you buy a mattress, ask for a Heywood Mattress. Then you know you will have comfort and satisfaction.

Heywood Mattresses are guaranteed by us to give perfect satisfaction for years—or we give you a new mattress.

Red Label price \$12  
Blue Label price \$15  
Gold Label price \$18

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Wakefield Company  
Portland, Oregon  
Seattle, Wash.

IF YOUR DEALER CAN-  
NOT SUPPLY YOU, WE  
WILL SHIP DIRECT

## You Want Them To Raise

This, in fact, is the purpose of all baking powder.

## CRESCENT

raises the dough better, and because of its purity and whole-



someness was awarded the Gold Medal at the Panama Pacific Exposition, 1915.

Sold by Grocers.  
POUND CAN 25c

## HARDWARE

Complete lines for needs of farmers. High quality, prompt service, right price.

Roofing Paper

Write us your needs.

HENRY MOHR HARDWARE CO.  
1141 Broadway, Tacoma, Wash.



lows spread and almost cover the crackers. Insert one-half of a candied cherry in each cavity, and arrange on a plate covered with a doily.—Fannie Merritt Farmer.

#### Carrot Pudding.

One cupful grated raw carrots, 1 cupful grated raw potatoes, 1 cupful suet, chopped; 1 cupful brown sugar, 1 cupful raisins, 1 cupful currants, 1½ cupfuls flour, level teaspoonful soda, ½ teaspoonful baking powder, 1 teaspoonful each of cinnamon and nutmeg.

Mix thoroughly, put in pudding-mold and steam three hours. Serve with hard sauce.

### GIVING ATTENTION TO HOME YARDS.

Traveling through the country in the Pacific Northwest an observer cannot fail to be impressed with the need of a general cleaning up about the home yards. Many of our farm homes have beautiful settings, being surrounded with verdure of evergreen trees and shrubs which are naturally attractive. But when the home yard is inclosed with broken down fences, piles of rubbish, old boards, discarded implements, tools and tin cans scattered about the farm home surrounding is not attractive. This is a good time of the year to give thought and attention to this matter. There is no excuse for not cleaning up. Put things in their proper places. If the yard is fenced keep the fence in good condition.

When means or ready cash will permit, then arrange for plant ornamentation. Those who can have a small, nice lawn should provide for that first, then select the bulb flowers, roses, flowering deciduous shrubs, evergreens and annuals to suit the tastes of the owner and to conform with some of the natural laws for beautifying a home place.

There is great satisfaction in the flowering bulbs and a proper selection will afford blooms through many months of the year. Once planted this class of flowers require but very little attention and they can be arranged for the most attractive and pleasing effects. Then the roses—the hybrids and teas, some of which are standard and found in thousands of farm yards

in the Pacific Northwest. Among these may be mentioned, Testout, La France, Druschki, Hugh Dixon, Lady Hillingdon, Sunburst, Alfred Carrier (climbing), and many others also of new and rare varieties.

Among the deciduous shrubs very desirable for the farm yard may be mentioned the Hydrangea, the Altheas, the Spireas, Labernum, Snowballs, Lilacs and Syringas. We have many beautiful native evergreens such as Oregon grape, huckleberry, the laurels, cedars and firs.

A good planting scheme provides for the placing of the tallest growing trees or shrubs in the rear, or towards the wall of a building where no window light is required, then graduate to the smallest flowering shrubs in front. Do not crowd too much and provide for a green lawn wherever possible. Do the planting this month or as early as possible.

Next is the painting. So many of our farm homes need paint. It may be true in many places that lumber is cheaper than paint and in the first stages of development in a new country actual necessities are given first consideration. But we should guard against chronic habits of neglect. With some measure of prosperity, there should be an equivalent attempt to fix up, adorn with plants and beautify with paint the farm home. It pays handsomely measured by the dollar standard, in self respect and in the pleasure given to all members of the family, the neighbors and to the observing stranger.

At this season of the year when the spirit of generosity is paramount, freely give of thought, time and effort to make the farm home more beautiful.

#### A FRIEND.

A friend is a present you give yourself—

That's one of my old-time songs—So I put you down with the best of them,

For you're where the best belongs.

Among the gifts I have given to me,  
Most comforting tried—true,  
The one that I oftenest think about,  
Is my gift to myself of you.

—Selected.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.

Conserve Dairy Energy and figure on the Individual Cow.

### CREAMERIES AND MARKET PRICES.

During the past few years the butter makers of the Northwest have made substantial progress. The creameries they represent are gradually on the up-grade. Twice a year there are scoring contests and friendly competition in striving for a better quality of product.

Secretary N. P. Sorenson is preparing for the next meeting and competitive scoring soon to be held in Seattle. He reviews the past work of the Association and directs attention to the markets which quote city creamery butter about 2 cents higher than the country creamery product. As with others he is anxious to ascertain the reason and if well founded, then if possible to find a remedy and apply it.

Let us consider the last exhibit of butter by the creameries at the State Fair, North Yakima. More than three fourths of the 20 or more tubs submitted fell below the 90 point score in quality. It was the minority lot which reached the 95 point, or in other words surpassed the average quality of the city creamery. In this country of majority rule, it is fair to presume that the rating of the product as to quality in any classification is based on its principle content. So long as more than half of the country creameries offer butter which scores near 85% it takes the lower designated market rating. But that is not fair to the creameries in the country which produces the higher quality product. As a matter of fact these creameries making the 90% score or over do not, as a rule, sell

## TEST OF 21 YEARS

The Northwest Grocery Company has been and is doing a strictly cash business with 10,000 satisfied customers. Why not you? Your mail order will receive the same careful attention as though you came in person.

### OUR CATALOG

Gives you lowest prices on reliable Groceries. We pack and deliver to the freight depot free. Send postal today for our catalog and further information.

Northwest Grocery Co.

1302-4 Commerce  
TACOMA WASH.

## A. S. Johnson & Co.



1142 C Street Tacoma, Wash.



#### Simlex Separators

The world's Best Cream Separator. Skims according to nature's law — cream from the top — milk from the bottom. Successfully skims cold milk. No waste. Thousands in use in the Northwest.

Write for Free Book.

Monroe & Criswell

"Everything for the Dairyman"

129 Front St. Portland, Or.

## HOLSTEINS REGISTERED and HIGH GRADE

Large herd. Quality A1. Price low, because of small corn crop. Write for full particulars. Mention this paper.

J. M. LOCKWOOD  
Marengo, Iowa.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.

### Electric Light Farm

## A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease Ellensburg, Wash.

**FARMS WANTED** — To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

## GARMENT PATTERNS

Order by number. See description below.



1528—Girls Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 2½ yards of 44 inch material for an 8 year size. Price 10c.

1515—Girls Middy Dress. Cut in sizes: 6, 8, 10, 12 and 14 years. It requires 4½ yards of 44 inch material for a 10 year size. Price 10c.

1529—Costume for Misses and Small Women. Cut in 3 sizes: 16, 18 and 20 years. It requires 7 yards of 44 inch material for an 18 year size. The skirt measures 3½ yards at the lower edge, with plaits drawn out. Price 10c.

1533—Ladies Costume. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6½ yards of 44 inch material for a 36 inch size. The skirt measures 3 yards at the lower edge. Price 10c.

1501—Ladies Shirt Waist with Convertible Collar. Cut in 7 sizes: 32, 34, 36, 38, 40, 42, and 44 inches bust measure. It requires 2½ yards of 40 inch material for a 36 inch size. Price 10c.

1266—Set of Baby's One Piece Long Clothes. Cut in one size. It requires for Sack, ¾ yards of 27 inch material. For Slip, 2½ yards of 36 inch material. For Wrapper, 2¾ yards of 27 inch material. For Barra Coat, 1½ yards of 40 inch material. Price 10c.

1518—Ladies Kimono. Cut in 3 sizes: Small, Medium and Large. It requires 6 yards of 44 inch material for a Medium size. Price 10c.

1522—Ladies House Dress. Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6½ yards of 44 inch material for a 36 inch size. The skirt measures about 3 yards at its lower edge. Price 10c.

About 10 day's time required.  
**NORTHWEST HORTICULTURIST & DAIRYMAN**  
Box 1604, Tacoma, Wash.



at the "country creamery" market quotation. They get "city creamery" prices, and sometimes better. Is it just or unjust that the others should take the lower rating until such time as they can overcome obstacles which are in their way for improvement?

When 75% of the creameries in the country improve the average quality of their butter output 5 points on the 100 score rating, then the country creamery market quotation will be a thing of the past.

Another remedy within reach of the progressive butter makers and country creameries is to establish a market quotation based on the actual score. There are at least half a dozen creameries in the State of Washington, located in the country of course, whose score is close to 95 point the year through, and their total output is large. By organizing they could become a power in the market to make a classification based on quality instead of the present market system that protects city creamery butter regardless of quality by the impractical distinction of "country creamery," a term that does not cover the product which it implies.

It is up to the butter makers and the so-called country creameries to help establish market quotations based on quality by adopting some significant term which will convey to the buying public a distinction between the high and low grade instead of the meaningless distinction between city and country. Brand and quality are both good but without quality a brand soon loses its selling significance.

### HOLSTEIN BREEDERS' ORGANIZATION.

#### Northwest Branch of National Association.

The preliminary organization of the Northwest Holstein Breeders' Association started in Seattle last month was perfected at North Yakima during the Cascade International Live Stock Show. The following are officers: President, W. K. Newell of Forest Grove, Ore.; Vice-president, George Gue, of North Yakima; Secretary, David Monroe of Spokane; Treasurer, F. S. Stimpson of Seattle. F. S. Stimpson, E. B. Marks and E. A. Stuart of Seattle are on the committee on resolutions and the delegates to the national convention are William Bishop of Chimacum and H. C. Davis of Granger.

### SUCCESSFUL CHEESE INDUSTRY.

#### Adherence to System, High Standard.

The cheese makers of Wisconsin are experiencing a high measure of success because they have adopted a good system both in the matter of production and in the marketing of their noted cheese and are adhering strictly to rules and regulations which they have adopted. Their experiences and methods may serve as a valuable guide to cheese makers in the Pacific Northwest, for some very important principles may not be ignored by any community of farmers who would succeed.

Mr. J. B. McCready, manager of Sheboygan County Cheese Federation, Plymouth, Wisconsin, told the story of how his association markets seven million pounds of cheese annually by

co-operative methods, before the recent National Conference on Markets and rural credits.

He said that cheese makers now realize that they are receiving for their product all that they are entitled to, that cheese dealers now recognize the co-operative association as a legitimate competitor, and that the farmer understands that the federation stands as a barrier between the local dairy board of trade and the buyer to prevent the arbitrary fixing of board prices. He explained also how the federation encouraged standardization and better quality. Mr. McCready said in part:

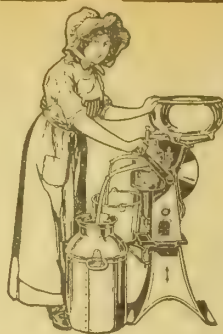
"Standardization is the big problem before the cheese interest today. There are millions of pounds of good cheese made in Wisconsin annually, yet, sad to relate, there are also a great many pounds of poor cheese made and there will be until we have a considerably closer system of grading for quality. Our federation grades all cheese on their arrival at their warehouse, putting out only the best under our brand, and selling the under grades at a lower price for what they really are.

"Whenever one of our factory men has under-grade cheese we write him, giving him the date on which they were made, calling his attention to the defect and suggesting a remedy whenever it is possible to do so. I believe by doing this we have materially benefited the quality of our cheese this year over last. In fact, our loss on quality this year has been much less than it was up to this time last year. While it is true that this season has been much more favorable for making good cheese than last, owing to the abundant rains and cool nights of last season, yet I believe that the plan of advising cheese makers of their shortcomings and recommending changes has been of material benefit. Also I can see that our cheese makers this year have been more open to suggestion. A friendlier feeling exists and there are more signs of a willingness to co-operate.

"In grading cheese we try if possible by seeing them, to find where the fault lies. If the cheese maker is to blame the loss is paid by him. I believe that of 65 per cent. of the poor cheese made the fault can be laid at the door of the farmer who is careless and does not take proper care of the milk before delivering to the factory. There are very few cheese makers who can make good cheese from poor, raw material to begin with.

#### The Premium Incentive.

"I hope to see the standard of our cheese raised and I believe we are getting along toward the goal, slowly, perhaps, but surely, and we shall progress faster when we have become better established and stronger—when we can offer to pay the factory men making fancy cheese a premium over the man who just insists on making a passable cheese. This premium should be in the form of a bonus or prize to the cheese maker for his ability and extra labor in producing nothing but the best. Under existing conditions there are cheese makers who can make a better cheese than they do, but are satisfied to go along making cheese just good enough to pass the buyer because they are all paid the market price for passable, or so-called, market-able



There is no good reason why you should wait till next spring before getting a **DE LAVAL**

IF YOU ARE SELLING CREAM or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

THERE CAN ONLY BE TWO real reasons for putting off buying a De Laval; either you do not really appreciate how great your loss in dollars and cents actually is or else you do not believe the De Laval Cream Separator will make the savings claimed for it.

IN EITHER CASE THERE IS one conclusive answer: "Let

the local De Laval agent set up a machine for you on your place and SEE FOR YOURSELF what the De Laval will do."

YOU HAVE NOTHING TO risk and more than a million other cow owners who have made this test have found they had much to gain.

YOU CAN'T AFFORD TO wait till next spring. Let the De Laval start saving cream for you RIGHT NOW and it will earn its cost by spring.

SEE THE NEAREST DE Laval agent at ONCE, or if you do not know him, write us direct for any desired information.

### DE LAVAL DAIRY SUPPLY COMPANY

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NEW YORK

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

### SUCCESSFUL DAIRYMAN

Are constantly figuring to keep down the cost of the feed bills on a well-balanced milk ration in order to

#### MAKE THE LARGEST PROFIT MARGIN.

In the Coast section, clovers, vetches, peas and other leguminous crops rich in protein are grown abundantly, and dairymen require more of the carbonaceous concentrates to make up the economical and substantial ration; for that purpose barley and corn are better suited than any other grains when not too costly.

As by-products of our factory, barley and corn are put up in a wholesome feed mixture showing the following analysis:

|                                   |        |
|-----------------------------------|--------|
| Moisture .....                    | 5.64%  |
| Crude fat .....                   | 6.38%  |
| Crude Protein .....               | 14.71% |
| Crude Fiber .....                 | 18.25% |
| Maltose .....                     | .82%   |
| Starch .....                      | 36.79% |
| Nitrogen, Free extract, etc. .... | 14.74% |
| Ash .....                         | 2.67%  |

Total ..... 100.00%

The crude fat, fiber and starch composing over 60 per cent. makes this concentrate a valuable addition to any home-grown feeds rich in protein. Being a by-product we can make attractive prices.

Write for sample, price on quantity, and full particulars.

**THE FLEISCHMANN CO.,**  
Sumner, Wash.

Feed Department

Manufacturers of Fleischmann's Yeast



### SKYKOMISH VALLEY HERD HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.



cheese and docked for under grades so that they are only interested in not having under grades and not interested in having fancy cheese. We have a standard of perfection in cheese as in all other things. Some of our cheese makers reach this standard and on the average stay mighty close to it all season, but there are a great many who do not even get close. When we become financially and co-operatively strong enough to pay extra quality I hope and believe every one of our factory men will reach this standard. If he does not, I believe he will have to make room for a better man."

### CHEESE MAKING IN WASHINGTON.

The cheese market has been attractive to the dairymen of Washington during the past summer and by another year it is likely many other dairy districts than those below mentioned will give attention to cheese making. There is a large foreign market for cheese, it is a staple product not subject to great fluctuations, but it is very important that the product offered on the market shall conform to a fixed standard of high quality. Foreign cheese buyers cannot be fooled often and reaction caused by neglect or indifference is usually severe for producers.

According to statistics compiled in the office of Acting Commissioner of Agriculture H. T. Graves, there was produced in the State of Washington during the year from June 30, 1914, to July 1, 1915, a grand total of 1,065,076 pounds of cheese, having a value of \$187,477.

The total production of the state by counties and the complete list of cheese factories is:

|                  |         |           |
|------------------|---------|-----------|
| Clarke .....     | 240,356 | \$ 33,938 |
| Cowlitz .....    | 67,767  | 9,488     |
| Grays Harbor ... | 58,097  | 7,553     |
| Jefferson .....  | 208,580 | 30,609    |
| Lewis .....      | 5,076   | 762       |
| Pacific .....    | 124,803 | 31,201    |
| Snohomish .....  | 138,685 | 35,709    |
| Whatcom .....    | 221,712 | 38,217    |

Totals .....1,065,076 \$187,477

#### Cheese Factories in State.

Arlington Co-operative Creamery Association, Arlington, Wash.

Bishop's Creamery, Chimacum, Wn.

Center Cheese Factory, D. S. Troy, manager, Center, Wn.

Chimacum Cheese Factory, D. S. Troy, manager, Chimacum, Wn.

Damascus Creamery Co. (2), W. T. Scott, manager, Woodland, Wn.

Ferndale Creamery, Ferndale, Wn.

Cackamas Cheese Company, Proebstel, Wn.

Cackamas Valley Co-operative Dairy Association, J. W. Jones, manager, Orchards, Wn.

Menlo Creamery Co., C. P. Dobler, Menlo, Wn.

Quilcene Cheese Factory, D. S. Troy, manager, Quilcene, Wn.

Royal Dairy Co., H. O. Martins, manager, Bellingham, Wn.

Satsop Co-operative Cheese Factory, W. E. Johnson, manager, Satsop, Wn.

Vonrotz Brothers, Satsop, Wn.

### UNNECESSARILY ALARMED.

In the transmission of tuberculosis from cattle to man, the danger has been so exaggerated as to lead one to believe that no one could escape the disease.

Milk for the cities is being pasteurized, and the butter sold in our large

cities is made from pasteurized cream, so that if the danger would be as great as has been exaggerated, there would be no danger of transmitting the disease. An eminent bacteriologist writes that: "So far as I am aware, there is no case on record where it has been conclusively proved that butter infected with tubercle bacilli has been the means of producing the disease in the human." Another eminent bacteriologist says: "That while it is possible for pathogenic bacteria to maintain their viability in butter for a considerable period of time, so far as I know, no case of the transmission of disease of any kind through butter has been reported. My personal opinion is that the danger from butter is very slight on account of the very small number of pathogenic bacteria which would be likely to occur in butter even if made from unpasteurized cream and the comparatively small amount of butter which is consumed."

In fact, never in the history of the country has there been such good butter, milk, cream and cheese sold than there is today, and no products are as healthful, nutritious and cheap as are those from the dairy cow.

### DUVALL TESTING ASSOCIATION.

A cow testing association known as the "Better Cows Co-operative Cow Testing Association" has just been organized at Duvall, in the Snoqualmie valley. This association is the result of the work of Mr. A. J. Lashbrook, dairy field agent of the State College, co-operating with Mr. Floyd Rader, county agriculturist of King county. Mr. S. F. Platt of Duvall was elected president and Henry C. Rosen of Monroe, secretary. Twenty-two members pledged 547 cows. Work will begin January 1. This makes two associations in King county.—Ex.

### HOLSTEIN CATTLE AT STATE INTERNATIONAL STOCK SHOW, NORTH YAKIMA.

The Yakima Valley Holstein Breeders third annual sale was held at North Yakima, Wash., Friday, November 26, with consignors and buyers as follows:

#### Consigned by H. S. Davis.

One bull to Roselawn Stock Farm, Sunnyside, Wash., for \$225. One bull calf to Pat McCoy, Seattle, \$65.

Females—Buyers and prices were as follows: Wm. McKinney, Meadow Creek, Wash., \$250; W. H. Harrison, Sunnyside, \$260; Wm. Wade, North Yakima, \$120; D. F. Nugent, Granger, Wash., \$320; G. E. Smith, Byron, Wash., \$180; C. C. Winger, Grandview, Wash., \$230; W. H. Harison, \$326; D. F. Nugent, \$310; G. E. Smith, \$280; A. C. Mills, Ferry, Wash., \$170; Pat McCoy, Seattle, \$400; Hollywood Farm, \$415, \$350; Pat McCoy, \$375; C. C. Winger, \$230; H. L. Redd, Granger, \$130; Pat McCoy, \$350.

#### Consigned by E. B. Marks.

Females—Buyers and prices paid were as follows: J. H. Hurlbert, \$350; H. C. Davis, \$330; Wm. Bishop, \$255; J. S. Sndweeks, Mabton, \$175; G. V. Harris, \$275; H. A. W. Tramm, Chelalis, \$165; C. F. Jenness, Meridian, Idaho, \$165, \$165; Olsen Fruit Co., Zillah, \$305; Pat McCoy, \$115; H. C. Davis, \$320; Pat McCoy, \$335; S. V. Fanning, White Bluff, \$205; G. V. Harris, \$275; Wm. Bishop, \$105; A. H. Waddington, North Yakima, \$125; H.

## GLENDALE CREAMERY CO.

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

### GLENDALE CREAMERY CO.,

D. S. Troy, Manager.

Chimacum, Wash.

**Ayrshires** Herd of 100 head to select from. Any age, number and sex for sale. We have some grand young bulls ready for service which we are selling subject to approval. We pay express. Write us your needs.

### CRESCENT HILL FARMS

Walter J. Domes, Prop.

McCoy, Oregon.

## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

### Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## Brady Farm Guernseys

We have for sale several fine heifer calves from youngsters to yearlings and older. Also some young bulls out of heavy producers. Write for butter fat records and dams' show winnings. Please mention this paper.

E. R. BRADY  
Satsop, Wash.

## More Cream and Better Milk

By feeding

### ALBERS MOLASSES FEED

A Combination of

CANE MOLASSES

SOYA BEAN MEAL

GROUND BARLEY

GROUND OAT FEED

The above combination as we have it forms a feed that will produce more cream and better milk than any other feed on the market that can be bought for the same amount of money.

The Cane Molasses makes the feed very palatable and aids in the digestion of the grains and other feeds the cow may eat.

ALBERS MOLASSES FEED will give you satisfaction. Order from your dealer or write us.

## Albers Bros. Milling Co.

SEATTLE  
TACOMA

LOS ANGELES

PORTLAND  
SAN FRANCISCO

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312. Our 2-year-old Nena Cornucopia produced in 30 days 733.3 lbs. milk and 5.037 lbs. butter.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Dukeenary Newman, son of Margie Newman.

These Washington high record foundation stock will please correspond or call.

C. E. ELDRIDGE,  
CHIMACUM,  
WASH.

Kindly mention this paper



W. A. Tramm, \$140; E. F. Jenness, \$145; John Heffron, \$300; D. F. Nugent, \$315; A. L. Pierce, \$330; C. F. Jenness, \$205; G. V. Harris, \$215; Hollywood Farm, \$210.

One bull calf to Ed. V. Eschback, Natches, \$80.

Consigne by Todd & Sons.

Females—Buyers and prices were as follows: V. L. Georgeson, Grandview, \$120; J. Seiker, North Yakima, \$65; J. C. Burman, Snohomish, \$200; J. L. Hulbert, Mt. Vernon, \$220; S. V. Fanning, White Bluff, \$220, \$125.

Consigned by J. Heffron.

One female to Pat McCoy, \$150.

Consigned by Geo. A. Gue.

Females—Buyers and prices were as follows: Pat McCoy, \$185, \$225; L. D. Allen, Granger, \$150; J. F. Schreiner, North Yakima, \$170; H. Cranke, Spokane, \$190; Wm. Bishop, Chima-cum, \$175, \$185; Pat McCoy, \$125; A. C. Mills, \$265.

Males—Buyers and prices paid were as follows: D. S. Beardsley, North Yakima, \$50; P. H. Adams, Wapato, \$65.

Other Consignments.

A 6-year-old cow, by W. Nelson, North Yakima, to Hollywood Farm, for \$950.

A yearling bull, by C. S. Mead, to James Markel, Natches.

A yearling bull to E. J. Hardison, North Yakima, for \$50.

Another to Pat McCoy for \$100.

In this sale the buyers were mostly practical dairymen and they were guided in their purchases largely by the ancestral records of the animals offered for sale, as well as any tests the individuals on sale could show. These points as well as the general conformation of the cattle as dairy types and their general appearance served as guides for the bidders.

Whenever the cattle brought high prices the records always showed high tests back on the sires side indicating the value of good sires. But strange as this may seem, dairymen as a rule are not ready to buy good bulls. It seems that most of those who realize their value are already supplied and those dairy farmers who are blind to increased profits they might derive from buying a sire from high producing ancestry must first be made to see. We know of no better way than to suggest to those who are skeptical about the value and importance of breeding up, to visit a number of dairy farmers who are realizing a satisfactory margin of profit and who after a number of years are satisfied to continue in the work of dairying. As a rule they are willing to impart practical information from their experiences and from a number of their testimonies any honest doubter or near sighted dairyman can hardly fail to receive some benefit. Breeding up is not a matter of accident but the result of painstaking efforts, governed by the same common sense methods which good dairymen apply to their every-day care in their dairy operations.

#### HIGH RECORD 2-YEAR OLD JERSEY.

The 2-year old Jersey cow G. M. Melia, owned by Burt Pease, Ellensburg, Wash, produced 6,516.5 lbs. milk making 464.8 lbs. butter in 365 days under official test. This gives her third place as competitor among Jerseys in the United States in the 2-year class.

Mr. Burt Pease has done exceed-

ingly well to develop to a high state of efficiency every registered cow in his valuable herd in a comparatively short course of years. Dairymen of the Pacific Northwest appreciate the opportunity to be able to buy the very best of this breed in this section.

#### THE CASCADE INTERNATIONAL.

The first Cascade International Show is now history and the volume and quality of the stock were fully up to the mark set by its promoters. President Splawn, Secretary Nelson and the board of managers deserve great credit for their painstaking and successful efforts. The weather was somewhat inclement during the show week, causing less attendance than had been anticipated, but the people of North Yakima and the live stock raisers have expressed determination to continue the show as a yearly event, perhaps fixing the date a little earlier next year.

The buyers for fatted live stock showed the effects of a declining market, but the wise farmer knows that with money a little easier to obtain, the live stock game will be both interesting and attractive.

That the exhibit of dairy cattle, fat cattle, hogs, sheep and horses at this fair has not been surpassed in quality in the west was the opinion of leading live stock men who are from all parts of the country. From this time on the live stock industry will develop as has the fruit industry, though not detracting from that valuable asset.

Some of the new live stock enthusiasts have wrongly diagnosed the ailment of a seeming wanting condition of prosperity by attributing the cause to the fruit industry. This of course shows short-sightedness and ignorance to a certain degree, for the money which has actually been sent out of any fruit district in the development of a fruit farm, besides the peoples own labor, is small even compared with that paid for live stock. But the cost of the irrigation ditches and the farms under irrigation are twice and in some cases three times as great as was the first estimate. But time will prove the investment good even at that, and more the live stock industry will stand on its own merits ranking in quality second to none in the land.

Dairy Cattle.

The dairy cattle were an even lot and well lined up, the pick from previous shows. Prof. H. H. Kildee, of Ames, Iowa, was the judge.

Holsteins.

Exhibitors: E. E. Bell, Careywood, Ida.; John L. Smith, Spokane, Wash.; W. W. Butler, Grandview, Wash.; Marks & Davis, Granger, Wash.; George Gue, North Yakima; Tyson & McElheer, Moxee City, Wash.; Wm. Todd & Son, North Yakima; John Heffron, North Yakima; Morehead & Hobson, Outlook, Wash.; Wm. Nelson & Son, North Yakima; J. C. Simpson, North Yakima; Fechter & Janek, North Yakima; Wm. Bishop, Chima-cum, Wash.; J. O. Morrison, North Yakima.

Bulls: Three years old or over—1, Smith on Hazelwood Ormsby Posch; 2, Smith on Hazelwood Sir Ormsby; 3, Marks & Davis on Mutual Fobes Lonfield De Kol; 4, Bishop on Sir Oregon Colantha. Two year old and under three—1, Marks & Davis on Mutual Lad Tritona Posch. Senior yearling—1, Smith on Hazelwood Bandmaster; 2, Tyson & McElheer on Moxee Homestead Burk; 3, Bell on Korndyke Abberkirk Ormsby Junior

## Dairy Supplies

Cream Separators, Milk Bottles, Bottle Carriers, Dairy Cans and Pans, Strainers, Brushes, Wyandotte Washing Powder—everything for the Dairy.

TACOMA IMPLEMENT CO.  
1521 Pacific Ave. Tacoma, Wash.

## DAIRYMEN

We can supply your wants, complete with articles of any description which can be carried by Parcel Post to full barn and milk house equipment. Positive satisfaction assured on all goods we handle and we ship very promptly. We are filling orders for vetches and grass seeds for late sowing.

Gasoline Engines for every farm purpose.

## Poole's Seed and Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

## JERSEY HEIFERS FOR SALE

Have a few registered Jersey heifers and heifer calves as well as young Register of Merit cows to offer at prices far below their value. All high class, prize winning, producing stock.

SILVER BIRCH FARM

Route 1, Box 3

NEWPORT, WASH.

## DAIRYMEN WANTED

Fine opening for good dairymen who have a few cows or some cash. Good opportunity for the 20-cow unit dairyman on a co-operative basis. For particulars address W. H. Kaufman, Bellingham, Wash.

**CANE MOLASSES** is the most palatable feed on the market. It has a sweet taste and pleasant odor, is much relished by farm animals, and increases the digestibility of the other feeding stuffs eliminating cases of colic and other digestive ailments.

The high percentage of Carbohydrates which are chiefly in the form of sugars gives Cane Molasses a wonderful feeding value and forms a very valuable feed for horses, cows, hogs and sheep when fed in proper quantities.

Professor Henry of Wisconsin, one of the world's foremost experts on feeds and feeding, makes the statement that Cane Molasses may be rated equal to the same weight of corn in feeding value.

We buy Cane Molasses by the shipload and are in a position to supply you through your dealer.

## Albers Bros. Milling Co.

SEATTLE  
TACOMA

LOS ANGELES

PORTLAND  
SAN FRANCISCO

## Waikiki Farm

Breeders of  
JERSEY and AYRSHIRE CATTLE  
DUDCOT JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## A. J. C. C. JERSEYS

Big Producers

Fine heifers and young bulls of the highest breeding for sale.  
Member American Jersey Cattle Club.

J. B. EARLY

Grandview, Wash. (Yakima County)



yearling—1, Gue on Greenbank's Model Pontiac; 2, Marks & Davis on unnamed; 3, Todd & Son on Yakima Champion Senior calf—1, Marks & Davis on Mutual Lad Tritona; 2, Smith on Hazelwood Mercedes Ormsby Prince; 3, Bishop on Segis Burk De Kol Pontiac; 4, Tyson & McElheer on unnamed. Junior calf—1, Bishop on Sir Chimacum Wayne Sutsche; 2, Bishop on Sir Chimacum Wayne Cornucopia; 3, Marks & Davis on unnamed; 4, Smith on Hazelwood Ormsby Posch Korndyke.

Cows: Three years old or over—1, Bishop on Bonnie Ormsby Lass; 2, Marks & Davis on Fobes De Kol 2d Johanna; 3, Bishop on Cascade Marie; 4, Smith on Bracelet Alta Posch Pieterje. Two years old and under 3—1, Smith on Hazelwood Alban Ormsby; 2, Todd & Son on Cascade Ruth; 3, Marks & Davis on Pride Pontiac; 4, Bishop on Aaggie Nena Cornucopia. Senior yearling—1, Smith on River-view Mechthilde; 2, Smith on Hazelwood Ormsby Spoford; 3, Smith on Hazelwood Nelie Ormsby; 4, Marks & Davis on Mazie Fobes. Junior yearling—1, Marks & Davis on Queen of Weat Hill 2d; 2, Smith on Oakie Doodoo 2d; 3, Gue on Cascade Blossom; 4, Bishop on Violet Fayne Pieterje. Senior calf—1, Smith on Hazelwood Homestead Bracelet; 2, Bishop on Riverside Bracelet Chloe; 3, Gue on Cascade Gretchen; 4, Gue on Rubie Hengerveldt Aaggie 2d. Junior calf—1, Marks & Davis on Miss Model Pontiac; 2, Marks & Davis on Nozl Prilly Segis; 3, Marks & Davis on River-view Bracelet Beets; 4, Smith on Hazelwood Ormsby Korndyke De Kol.

Senior champion bull—Smith on Hazelwood Ormsby Posch. Junior champion bull—Marks & Davis on Mutual Lad Tritona Posch. Grand champion bull—Hazelwood Ormsby Posch. Senior Champion cow—Bishop on Bonnie Ormsby Lass Junior Champion cow—Bishop on Riverview Mechthilde. Grand champion cow—Bonnie Ormsby Lass.

Aged herd—1, Bishop; 2, Smith; 3, Marks & Davis. Young herd—1, Marks & Davis; 2, Smith; 3, Tyson & McElheer; 4, Todd & Son. Calf herd—1, Marks & Davis; 2, Smith; 3 and 4, Bishop. Get of sire—1, Bishop; 2, Smith; 3, Mark & Davis; 4, Todd. Produce of cow—1 and 2, Bishop; 3, Tyson & McElheer; 4, Marks & Davis.

#### Jerseys.

Exhibitors: C. P. Hembree, Monmouth, Ore.; A. H. Huebner, North Yakima, Wash.; Guy C. Chapman, Pomona, Wash.; I. B. Richards, Tacoma, Wash.; E. O. Erickson, North Yakima, Wash.; H. West, Scappoose, Ore.

Bulls: Two years old and under three—1, Hembree on Undulatta Prince; 2, West on Fussy Fern Noble. Senior yearling—1, West on Combination Premier; 2, Hembree on Rochette's Noble Duke. Junior yearling—1, West on Fancy's Raleigh; 2, Hembree on Roxy's Rochette Noble; 3, Chapman on Crystal Golden Sultan; 4, Hembree on Lass' Eminent Duke. Senior calf—1, West on Onota's Prince of S. B.; 2, Hembree on Sir Oxford; 3, Erickson on Sultan Star; 4, West on Onota's Peerless Lad. Junior calf—1, West on Onota's Composer of S. B.; 2, Hembree on Dairy Maid Gay Prince; 3, West on Onota's Jolly Fox; 4, Chapman on Crystal Golden Prince.

Cows: Three years old or over—1, West on Imp. Jolly Berna; 2, West on Imp. Great Pride; 3, Hembree on Imp. Brilliant Spray; 4, Hembree on Glorious Juannette. Two years old and under three—1, Hembree on Noble Peer's Jewel; 2, West on Alsatia of S. B.; 3, Huebner on Noble Peer's Violet. Senior yearling—1, Erickson on Sultan's Merry Carnation; 2, Hembree on Noble's Aley; 3, Hembree on Mab's Light Rosebud; 4, Weston Noble Lady of S. B. Junior yearling—1, West on Cotillon Sunny Maid; 2, Hembree on Champion May Queen; 3, West on Onota's Maggie of S. B.; 4, Huebner on Sultan's Empress Lassie. Senior calf—1, Hembree on Aley's Undulatta Princess; 2, West on Onota's Alsatia of S. B.; 3, West on Onota's Maid of S. B.; 3, Hem-

bree on Spray's Clothilda Antoinette; 4, Huebner on Lassie's Sultana.

Senior champion bull—Hembree on Undulatta Prince. Junior champion bull—West on Fancy's Raleigh. Grand champion bull—Fancy's Raleigh. Senior champion cow—West on Imp. Jolly Berna. Junior champion cow—West on Cotillon's Sunny Maid. Grand champion cow—Imp Jolly Berna.

Aged herd—1, West; 2, Hembree. Young herd—1, West; 2, Hembree. Calf herd—1, West; 2, Hembree; 3, Erickson. Get of sire—1, West; 2, Hembree. Produce of cow—1, West; 2, Hembree; 3, West.

#### Guernseys.

Exhibitors: A. L. Gile, Chinook, Wash.; D. H. Looney, Jefferson, Ore.

Bulls: Three years old or over—1, Looney on Sam Simpson; 2, Gile on King of Medfield. Senior yearling—1, Looney on Fermain's Iowa Boy of the Oaks. Senior calf—1, Gile on Chiconna Bell Rose; 2, Looney on Caranza of Jefferson. Junior calf—1, Looney on Captain Sand; 2, Gile on Chiconna Rivette; 3, Gile on Chiconna Highball.

Cows: Three years old or over—1, Looney on Ysobel Prince; 2, Gile on NINE—Hort—Dec

Lucilla of Chiconna. Two years old and under three—1, Looney on Princess Hermione; 2, Looney on Zeilpha; 3, Gile on Chiconna Clover. Senior yearling—1, Looney on Honeybunch; 2, Gile on Algoma Chiconna; 3, Looney on Jolly Augustine. Junior yearling—1, Gile on Rosemond of Chiconna; 2, Looney on Ysobel Princess Ilene; 3, Gile on Polly of Chiconna; 4, Looney on Precious Lady. Senior calf—1, Looney on Ailsa; 2, Gile on Veda of Chiconna; 3, Looney on Bunnie's Delight. Junior calf—1, Gile on Joseph's Pride of Chiconna; 2, Looney on Dada Lily; 3, Gile on Gaiety of Chiconna.

Senior champion bull—Looney on Sam Simpson. Junior champion bull—Gile on Chiconna Bell Rose. Grand champion bull—Sam Simpson. Senior champion cow—Looney on Hermione. Junior champion cow—Gile on Rosemond of Chiconna. Grand champion cow—Hermione.

Aged herd—1, Looney. Young herd—1, Gile; 2, Looney. Calf herd—1, Gile; 2, Looney. Get of sire—1, Looney; 2, Gile. Produce of cow—1, Looney.

#### Ayrshires.

Walter J. Domes, McCoy, Ore., was the only exhibitor and to him was awarded all the prizes in each class.

#### CORRECTION IN BEET PULP DIGESTIBILITY.

In the October number of this paper, on page 222 appeared an article on Dried Beet Pulp, Its Manufacture and Value, in which it was stated that the crude fiber contained was 48 per cent. digestible. It was intended to state "that this crude fiber is 84 per cent. digestible."

#### CREAMERY AND BUTTER-MAKERS MEET.

Members of the Washington Creamery Operators and Buttermakers' Association held their semi-annual scoring contest at the Hotel Faye, Seattle, during the early part of this month. George Van Kleiffens, Port Williams, carried off first honors with the high score of 94 points. Peter Nelson, Winlock, won second place with butter which scored 93.7 points, and I. Banedickson, Spanaway, third with a score of 93.6. There was keen interest taken in the scoring contest with its 21 entries. Prof. G. E. Frevert, Salt Lake City, Utah, acted as judge of the contest.

Below is published the list of entries and scores made:

| No.                                        | Points |
|--------------------------------------------|--------|
| 1. Geo. Van Kleiffens, Port Williams ..... | 94.    |
| 2. Peter Nelson, Winlock .....             | 93.7   |
| 3. I. Banedickson, Spanaway ...            | 93.6   |

## Holstein Home Herd

Our cows, heifers and youngsters brought very satisfactory prices at the recent public sales. We have a few more bulls and heifer calves which are out of heavy producers, which we offer at reasonable prices. We are booking orders for calves out of our famous bull Sir Bessie Fobes Tritoma.

**E. B. MARKS**

Route 5, NORTH YAKIMA, Wash.

## CHICONA FARM GUERNSEYS

At the Panama-Pacific Exposition we won first prize on Get of Sire of King of Medfield, the sire of Yeoman's King, Reserve Senior Champion bull, Polly of Chiconna, Reserve Junior Champion Cow, Veda of Chiconna, Junior Champion Cow and of Chiconna Bill Rose, second prize senior bull calf and the head of the first prize Young Herd and of the first prize Calf



King of Medfield, 15434

Herd. No other bull shown sired one champion. King of Medfield stands out pre-eminent as the greatest Guernsey sire in the West.

King of Medfield is sired by the great bull, Imp. King of the May, considered by many to be the greatest bull of the breed. At the National Dairy Show at Chicago last year, Langwater Farms took first on Get of King of the May. King of the May is sire of 17 daughters whose average production is 677 pounds of butter a year. The dam of King of Medfield is Imp. Hayes Rosie 3rd, a half sister to Yeoman, sire of the Peerless Dolly Dimple and the Grand Champion Bull at the National Dairy Show in 1912.

We are offering some excellent bull calves, sired by King of Medfield and out of Advanced Registry cows, for sale at very reasonable prices.

See our winnings at the Panama-Pacific Cattle Show, the greatest cattle show ever held on the Coast, in the news columns of this paper.

**ALBION L. GILE Prop.**

**CHICONA FARM HERD**

**CHINOOK, WASH.**

## Moxee Valley Holstein Farm

A NICE BUNCH OF YOUNG HOLSTEINS FOR SALE

Cows on official test are showing a high butter fat record.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

**TYSON & McKELHEER**

Moxee City, Wash.

## LAKE SIDE STOCK FARM HOLSTEINS

If you want a bull from such sires as King Segis Pontiac 13, breeding record 30.39 lbs., 4.25 per cent fat; Prince Segis Korndyke De Kol, breeding record 31.41 lbs., 3.72 per cent fat; Lunde Oregon Chloe Mechthilde, breeding record 21.77 lbs., 3.92 per cent fat; then please write. My prices are reasonable.

**P. A. FRANKS**

**Scappoose, Oregon**

Main 3552

W. W. PERKINS, Mgr.

## NORTHWEST CREAMERY SUPPLY COMPANY

We Have a Complete Line of

**CREAMERY PACKAGE MFG. CO.'S**

Creamery, Cheese Factory, Dairy Machinery and Supplies.

Everything Required by Dairymen.

306 Second Avenue South

SEATTLE



4. R. Hanson, Burlington Co-operative Creamery ..... 93.5
5. State College, Pullman, Wn. . 92.5
6. H. R. Heath, Oak Harbor ... 82.5
7. Lynden Creamery Co., Lynden Wash. .... 92.5
8. Prosser Creamery Co., Prosser, Wash. .... 92.3
9. Capitol City Creamery, Olympia ..... 92.
10. Cascade Creamery Co., North Yakima ..... 92.
11. Glendale Creamery Co., Glendale, Wash. .... 92.
12. Jas. D. Gove, Olympia ..... 92.
13. H. C. Kaiser, Centralia, Wash. 92.3
14. G. A. Hall, Chehalis ..... 91.7
15. Laurel Co-operative Creamery 91.5
16. Sorenson Creamery, Bellingham ..... 91.2
17. F. H. Wart, Ellensburg ..... 91.
18. Castle Rock Creamery ..... 90.5
19. Purity Milk Product and Refining Co. .... 90.5
20. Arlington Co-operative Creamery ..... 89.5
21. H. J. Keithahn, Tenino ..... 87.

Prizes contributed to the winners of three highest scores:

First Prize—Silver cup, given by De Laval Dairy Supply Company.

Second Prize—Gold watch, given by the Worchester Salt Company.

Third Prize—To have a cash value of fifteen dollars.

These prizes are to become the property of the winners of the three highest number of point in the contest of the three successive years.

Among those in attendance and who took part in an interesting program were:

1. Benedicson, Spanaway; S. J. Simonson, North Yakima; Geo. Van Kleiffens, Port Williams; M. Iverson, Sedro-Woolley; S. S. Morse, Montesana; N. P. Sorensen, Bellingham; J. E. Wrage, Arlington; Thos. H. Wright, Jr., Pullman; C. H. Palmer, Seattle; T. E. Hopkins, Seattle; G. A. Hall, Chehalis; J. A. Winchell, Centralia;

R. E. Miller, Shelton; A. L. Gove, Creswell, Ore.; H. F. Knutzen, Burlington; Harry Derrick, Olympia; H. J. Keithahn, Tenino; Mr. Davis, Lynden; Herman Ellenbaas, Lynden; W. W. Perkins, Seattle; M. F. Dake, Seattle; H. Menzill, Everett; Hy Montag, Seattle; L. E. Davis, Lynden; Thos. Nesbit, Silvana; L. C. Smith, Bellingham; Henry Bucey, Tacoma; Marcus Dey, State Dairy Inspector; A. B. Nystrom, State College; Senator D. S. Troy, Chimaicum.

Standardization and the establishment of a brand for the butter of a certain high fixed standard quality was the leading feature considered. When butter that will go above 90 in score of points can be made in large quantities then buyers will take notice and under a very simple form of association the creameries contributing can unite and have a representative in the market to have a voice when prices are fixed.

There was no apparent scrapping nor friction except just enough to remove any unseen cobwebs that might have been present to hinder a good rate of progress. The butter makers and creamery operators are on the right track. They have shown a vast degree of patience persuading and educating their patrons, in the observance of modern sanitary methods. Readers who are patrons of creameries, are urged to co-operate with them in every way possible.

#### BUTTER PRODUCED IN WASHINGTON.

The butter produced in the State of Washington for the year ending July 1915, was 18,444,225 pounds, valued at \$5,668,434, according to H. T. Graves, acting Commissioner of Agriculture. Less than 5 per cent. of this was exported. There was some imported but not nearly so much as in former years.

## Butter Making on Farms

With the parcel post service, butter making on the farm is again coming into practice, particularly in localities where creamery routes are not established.

When sending to market within the second zone (150 miles) the cost is only 2 cents per pound if shipped in 5 pound lots, including weight of wrappers. Quite a number of farmers in Western Washington who are making a high quality of butter which

scores close to the 95 point, and that will keep without developing off flavor for about a week, are getting the benefit of the retail market less 2 cents, by hunting up customers and filling standing orders regularly.

Those who have good creamery facilities or a satisfactory local market need not avail of the parcel post service, but the principles that apply to the making of a high quality of



Bonnie Lass Pauline, the Grand Champion Holstein cow at the Panama-Pacific Exposition and at several other shows. Owned by Wm. Bishop, Chimaicum, Wash.

*With Merry Christmas Greetings  
and wishes for your prosperity in  
1916, we close the year.*

*De Laval Dairy Supply Co.*

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.



## Puget Sound Herd Holsteins

HERD SIRES—QUIRINUS CORNUCOPIA and SIR CHIMACUM WAYNE

"Quirinus Cornucopia," whose six of the first daughters to be tested, have averaged 19 lbs. butter in 7 days as 2-year-olds. They are all making good in yearly tests including "Chimacum Wayne Boon 2d," 2 years old. She has just finished a years test of 21,572.1 lbs. milk and 881.68 lbs. butter. This record is the highest in the west for both milk and butter. She is a sister on her dams side to "Sir Chimacum Wayne," the world's greatest average record milk and butter bull. He is also brother on his sires side to the world's record heifer "Aaggie Nena Cornucopia."

Young bulls up to one year old are now being offered for sale from the above sires.

**WM. BISHOP, Prop.**  
Chimacum, Wash.

## Home of High Class Guernseys

(Dr. Park Weed Willis, owner)  
Herd sire carries best blood of Guernsey breed including Glenwood Boy of Haddon and Governor of the Chene. His dam has a record of over 700 lbs. butter in one year.

A very few choice bull calves for sale. Address

**ORCHARD HILL FARM**  
Redmond, Wash.

## HOLSTEINS

Registered bulls and cows for sale. Good producers. Write for records and prices.

**A. BENSON**  
Lynden, Wash.

## GUERNSEY BULLS

In our recent shipment from the east are 2 very choice young bull, descendants from Gov. of Chene breeding which we offer,—a rare opportunity for high record and very choice stock. After inspecting many herds our selection was made from a noted importer of Guernseys.

### DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

**AUGUSTINE & KYER,**  
First St., Seattle, Wash.

### HILLCREST FARM GUERNSEYS

Herd bull is a son of Yeksa Units, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

**C. G. HENKEL,**  
Opportunity, Wash.



butter in the farm, governs also to a large extent for those shipping a high quality of cream.

A most valuable bulletin covering Butter Making on the Farm is published by the Experiment Station, Pullman, Washington, written by Profs. A. B. Nystrom and R. E. Huntermark, in which the importance of cleanliness is emphasized. Keep materials in their proper places and from getting mixed. Good butter makers are very particular about this as a starting point. This bulletin contains the following directions:

Wiping the udder and flank of the cow with damp cloth previous to milking will prevent much dust and dirt from falling into the pail. A small topped pail is desirable in that it lessens the chance of dirt falling into the milk. The milk should be removed from the stable as soon as drawn from the cow.

Dirt in milk is undesirable because it leaves a bad flavor, but most of all because with dust and dirt there are many bacteria which also gain access to the milk. The many different kinds of bacteria that fall into the milk multiply, and as a result the milk contains flavors and decomposition products which later greatly hinder the manufacture of a good grade of butter.

As soon as the milking has been completed, the milk should be separated. The milk will still retain the animal heat sufficient to allow perfect separation. If it cools, however, the can should be immersed in hot water until the temperature has reached 90 degrees Fahrenheit, which is a good temperature for separating milk. It is often the practice to separate milk but once a day; in such cases the milk which is held over should be cooled to 5 degrees or below immediately after milking. Just before separating, it should be warmed again to the proper temperature.

#### Ripening the Cream.

All bacteria, good or bad, grow well at blood heat (98 degrees F.), very few grow well at 50 degrees F., while at 65 to 70 degrees F. the lactic acid (souring) bacteria grow very well and the undesirable one do not grow so well. By having the cream at the latter temperature, it gives the desirable bacteria a chance to gain control and crowd the others out. Very frequently in winter milk will turn bitter before it will sour. The reason for this is that the bacteria which causes bitter milk will grow well at low temperatures, while the bacteria causing souring will not grow at all. If the same milk had been heated to 70 degrees soon after it was milked, it would probably have had a clean acid flavor.

Mix all the cream in one vessel the day before you wish to churn, and let it stand at a temperature of from 70 degrees F. to 75 degrees F. to ripen for from six to eight hours or longer if necessary. The sweeter the cream and the cooler the temperature, the longer it will need to stand before the ripening is complete. Maintaining the cream at this temperature and for the proper length of time will allow sufficient acid to develop so that the characteristic flavor and aroma will result. After the cream has been well ripened it should be cooled to the churning temperature and held at that temperature until ready to churn.

#### Artificial Ripening.

In ripening of cream it is often desirable to get control of the process, or to ripen by means of a starter.

A starter is a mass of the desirable souring bacteria in an active form, growing usually in a milk medium. When a starter is added to cream, it should be in proportion of about 10 to 20 per cent. of the whole, but the exact amount to use will depend upon the temperature and quality of the starter and the cream, and upon the length of time the ripening is to continue. When the cream has an "off" flavor, or when the ripening temperature is low, 20 per cent. of the starter will be found desirable. Under normal conditions, however, about 10 per cent will be found sufficient.

These active bacteria will serve to inoculate the cream with the proper organisms, and the result is that the cream ripens with the characteristic flavor and aroma. With this practice the chances of an undesirable fermentation are very much lessened.

The natural starters are the ones most commonly used on the farm. They are made by selecting some pure milk produced under sanitary conditions, and divided into a number of sterile bottles. The bottles are set away at a temperature of 70 degrees F. to encourage the growth of the lactic acid bacteria, until the milk thickens. As soon as the milk thickens it is ready for use, for at that time the bacteria are most active and the flavor is best. The bottles are all examined and the best one is used for the mother starter. When a quantity is needed for pting into cream, a small amount of mother starter is used to inoculate a large can full of scalded and cooled skim milk. This is set aside to ripen and is then added to the cream before the ripening process begins. Skim milk is preferred as a starter because the absence of fat seems to aid in the rapid development of lactic acid bacteria. Skim milk for a starter should be heated to 170 degrees F. for about 20 minutes, then cooled to 70 degrees F. and a small amount of the mother starter added. As soon as it is thick it is ready for use. If the right kind of bacteria are present it should have a mild acid taste and leave no disagreeable after taste.

A pure culture of lactic acid bacteria, can also be obtained from any dairy supply house.

#### Preparing for Churning.

As soon as the cream is ripe, which can be determined by the glossy appearance when stirred, or which the acidity has reached about 0.5 per cent, it should be cooled to the churning temperature and kept at least eight hours before churning. This holding period gives the fat globules time to contract uniformly so that they will churn completely, thereby minimizing the loss of fat in the butter-milk. It is customary to ripen one day and cool down in the evening for churning the next morning. The cooling temperature varies with the conditions of the cream and season, and should be from 50 degrees in the summer to 60 degrees in the winter.

#### Churning Temperature.

This varies from 55 to 65 degrees F. The exact temperature to use depends on a number of conditions. Use a low churning temperature, first, when cream is very sour; second, when cream is rich in fat; third,

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#### TACOMA

at \$35 per acre for the best.

Terms are \$2 per acre cash; balance as you need it, with special inducements for settlers.

This land has been examined and is recommended by the C., M. & St. P. Ry.

Pamphlet and map mailed on request, and land shown by appointment by

**JESSE O. THOMAS, JR., AGENT.**  
320 Tacoma Bldg. Main 7818.  
Tacoma, Wash.

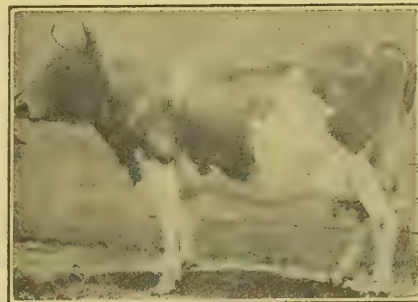
## Guernseys

High Class Registered Stock  
Records Well Known

Orders booked for young bulls for future delivery.

## D. H. Looney

Jefferson, Oregon.



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**  
Box 34, Milltown, Wash.

## HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

**MOUNTAIN VIEW FARM**  
Mt. Vernon, Wash.  
Otto Rundgren, Prop.

## Your Cows Yield as they Feel

Poor milkers are not accidents—they are usually backward because there is something wrong with their physical condition. You cannot expect such a cow to give a good milk yield until her sluggish organs have received proper medical treatment.

Kow-Kure has become the standard remedy in thousands of dairies because this famous cow medicine has great medicinal qualities that work upon and tone up the digestive and genital organs, making each perform its proper function.

You can prove for yourself the merit of Kow-Kure by trying a package on one of your poor milkers, and watch results carefully. Besides being a general tonic, Kow-Kure is especially recommended for the prevention or cure of such diseases as Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained afterbirth, etc.

**Dairy Association Company**  
Lyndonville, Vt.

# KOW-KURE

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At feed stores and druggists

FREE—"THE HOME COW DOCTOR"  
This valuable free treatise on diseases of dairy cows ought to be in every farm library. Send for your copy today.

#### FOR SALE

### Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

#### Plateau Farm

**VASHON, WASH.**  
**S. M. SHIPLEY, Proprietor.**  
Haller Bldg Seattle

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**

**R. F. D. 1**

**Lynden, Wash.**

### Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock. Also Registered Ayreshire Bull Calves at reasonable prices.

**F. I. MEAD,**  
524 California Bldg.  
**TACOMA, WASH.**

### DUROC BARGAINS

Weaned pigs, registered, \$7.50; boar and two sow pigs, \$18; bred gilts, \$15 to \$20. Defender, Crimson Wonder strains.

**SHADELAND FARMS**  
Amity, Ore.

### Ridgeview Duroc Jerseys

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

**ROBERT NELSON**

Route 2 North Yakima, Wash.

## FISH MEAL

Protein 55%; bone phosphate 20%; fat or sweet oil 10%; moisture 7%; fiber 1% in  
**BEST, PUREST AND CHEAPEST FORM.**

#### BUY SALMEL BRAND

and make your own mixed ration for **POULTRY, SHEEP, HOGS, CATTLE**  
Ask your dealer for Salmel Fish Meal or write for prices, etc., to

### SPOKANE GRAIN CO.

4958 8th Ave. South, Seattle, Wash.





when the fat globules are soft, due to laxative feeds fed to cows; fourth, during hot weather when the temperature is likely to rise while churning.

Use high churning temperature, first, when the cream is thin; second, when cream is rather sweet; third, when fat globules are hard, due to dry feeds fed to cows; fourth, during cold weather.

Cream is at the proper temperature when the butter comes in 30 to 40 minutes. Too high a churning temperature is undesirable as it causes the butter to come in the form of soft lumps rather than in the granular form. This often results in a greasy butter of poor texture, and one that has a high butter-milk content, causing it to deteriorate rapidly.

Too low a churning temperature is undesirable although this fault is not so serious as when the temperature is too high. When the temperature is low, the butter churns slowly. A low churning temperature may result in a butter that will not gather rapidly, the amount of moisture taken up may be below normal, and the butter may be brittle.

#### When to Stop the Churn.

Stopping the churn at the proper time has much to do with the quality of the butter. The churn should be stopped when the butter is in the form of granules about the size of a kernel of wheat or a trifle larger. When the butter is churned to too small granules, many of them will go through the butter-milk strainer and will cause more or less loss. Overchurning is undesirable because the butter will retain considerable butter-milk, which is difficult to remove and which also tends to cause the butter to deteriorate faster. As soon as the churning has been completed, the butter-milk should be drawn off.

#### Washing Butter.

Only fresh clean water should be used for washing butter. The purpose of the washing is to wash out any surplus butter-milk, and also to incorporate more or less moisture into the butter. If the butter granules are round and regular when the churning has been stopped, but one washing will be necessary. In this case the temperature of the wash water should be the same as that of the butter-milk drawn off if the firmness seems to be proper. In case the butter comes soft, it may be necessary to wash it two to four degrees below the temperature of the butter-milk, and on the other hand if the granules are extremely hard, so they will not gather readily it may be necessary to have the wash water two to four degrees above the temperature of the buttermilk. Add as much wash water as there was buttermilk. Rotate the churn about a five to six times or until the butter granules have coalesced slightly.

When butter has been overchurned, two washings will be found necessary. In this case add as much water as there was butter-milk, rotate the churn a few times and draw off the water, repeat the operation a second time rotating the churn more slowly. The temperature of the second wash water as a rule should be slightly higher than that of the buttermilk. The water should be clear when it is drawn off, showing that no free buttermilk remains.

#### Salting and Working.

The amount of salt to add to the

butter depends on the demands of the trade. As a rule, buttermakers use about one-half to three-fourths ounce of salt to every pound of butter. When a combined churn and worker is used, more salt will be necessary, about an ounce for every pound of butter. When the salting is done in the churn, sift salt evenly over the butter, revolve the churn once or twice and then let stand for 10 minutes so that the salt will dissolve, then complete the working. In case the butter is worked outside of the churn, it should be taken from the churn in the granular form, weighed, and then placed on the worker, after which the salt can be added. If possible, add the salt to the butter when the latter is in the granular form, it can then be incorporated more readily than when the butter has gathered.

#### The Overrun.

The overrun is the term that is applied to the increase that is obtained when butter is manufactured. The process of manufacture enables the buttermaker to incorporate more or less moisture, salt, and curd, which go to make up the overrun or the increase in the amount of butter over the pounds of butterfat that was present in the cream. The maximum amount of moisture in butter allowed by law is 16 per cent. With three per cent salt and one per cent curd, which are the percentages usually found in the butter on the market, and the maximum amount of water the buttermaker is able to get an overrun of 25 per cent. In other words, 80 pounds of fat will make 100 pounds of butter by incorporating with the fat 16 pounds of water, 3 pounds of salt, and 1 pound of curd, or 20 pounds of material which is not fat. Twenty is 25 per cent of 80, hence we have 25 per cent overrun.

#### Combined Churn and Worker.

The combined churn and worker is desirable in that the butter is not touched or exposed to the air from the time the cream is put in until the finished product is removed, all of the process, such as washing, salting, and working being carried on within the churn. This allows the buttermaker to control the conditions to better advantage than is possible where these operations are carried on without the churn.

#### Package and Marketing.

The style of package in which butter is offered for sale depends largely on the market, the amount of butter manufactured, and the frequency with which it is sold. The old way of molding farm butter in cakes, balls and rolls is unsanitary, and out of date, and a neater form of package is now used in its stead. The style of package has much to do with the sale and price of butter and on this account it is given much attention.

For home use the earthenware jar is best.

Tubs and boxes of wood and paper are used for packing butter. The wooden tubs are of ash or spruce and are made in different sizes, 10-pound, 20-pound, 30-pound, and 60-pound. In the larger creameries the 60-pound tub is used almost exclusively. Square boxes are used in the Western States; these commonly hold 60 pounds of butter. Wooden tubs and boxes should be lined with parchment paper, after both have been thoroughly soaked and steamed.

Parchment paper cut to fit the

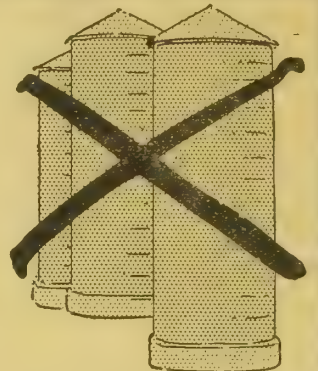
## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,**  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

"We have abandoned the use of silage altogether, altho we have an investment of approximately \$1500 in silo machinery, which will go to waste.



"We do not consider corn silage an economical feed where dried beet pulp can be obtained

for \$30 per ton or less; for the simple reason that it is necessary to supplement a ration of alfalfa and corn silage with a liberal ration of high-priced grain in order to get the cows to do their best, while even the heaviest producing cow will give practically as much milk on a ration of only alfalfa and dried beet pulp as on the most concentrated grain ration. We have proved this absolutely by the official scales and test."

This is the statement of McAllister & Son, the well known breeders of Holstein Freisian Cattle. You can get equally satisfactory results. Go to your feed dealer today and order a single 100-lb. sack of either the plain or molasses dried beet pulp. Ask for Larowe's. Test it on one cow whose milk record you know—and watch results.



—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened. It is put up in convenient 100-lb. bags and may be had either plain or with molasses.

#### FREE Our Booklet "Profitable Feeding."

—containing valuable information on feeds and feeding. Should be in the hands of every dairyman. Write for a copy—today.

**THE LAROWE MILLING CO.**  
939 Central Building LOS ANGELES, CAL.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**  
N. P. Wharf, Tacoma, Wash.

### Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT Dungeness, Wash.**

**BLACK LEG** LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. **THE CUTTER LABORATORY, Berkeley, California.**

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. **C. C. BUCKINGHAM, Houston, Texas.**

### JERSEY BULL CALF

Dropped April 9th, 1915, solid light fawn, and large for age. Sired by son of Eminent. One half sister gave over 8,000 lbs. milk with first calf, another 9494 lbs. with second calf. Price \$50.

**DAVID C. DILWORTH,**  
Buckeye, Wash.

### DAILY MARKET REPORTS

To furnish daily market service, we have arranged a club rate with the Daily Produce News, published at Seattle. The regular price is 50 cents a month or \$5 a year, but we send this daily one year and the Northwest Horticulturist & Dairyman three years for \$5, or the daily 3 months and this paper one year for \$2.

**N. W. Horticulturist & Dairyman**  
Box 1604, Tacoma, Wash.

**FARM LANDS**—In Central Washington, improved and unimproved. Particulars on application. References. **H. B. CARROLL, Ellensburg, Wash.**



package is commonly furnished with the tub or box.

For the home dairy one pound prints or bricks of butter are coming more and more into favor. Each print or brick of butter should be wrapped in parchment paper and then enclosed in the carton. The parchment paper and carton many be plain, but more often the butter maker has some distinctive design on it. The state law requires that the weight of the contained butter shall be printed on the carton. The cost of the paper and carton is about one half cent per pound of butter. Small boxes or corrugated paper, holding a few pounds are suitable for shipment by parcel post or express.

### HOLSTEIN AWARDS, LIVE STOCK SHOW, PORTLAND.

Awards at the Pacific International Show on Holsteins were:

Cow 4 years or over—First, Bonnie Ormsby Lass, William Bishop, Chima-cum, Wash.; second, Rilla Canary, David McKeown, Gresham, Or.; third, Lady Natsby DeBrooks, Kaspar Jenny, Brush Prairie, Wash.; fourth Hengeveld Pietertje Beets, Hugh Nisbet, Chima-cum, Wash.

Cows 3 to 4 years — First, Cascade Marie, William Bishop; second, Princess of Fair Oak, Kaspar Jenny; third, Sunny Croft, De Kol 2d, William Bishop; fourth, Vanish Pietertje De Kol 3d, Hugh Nisbet; fifth, Violet Veeman De Kol Fayne, avid McKeown.

Heifer, 2-3 years—Cloveridge Pieter-tje Belle, W. K. Newell, Seghers, Or.; second, Aaggie Nena Cornucopia, William Bishop; third Lois De Kol Korn-dyke, W. K. Newell; fourth, Butterfly of Fair Oak, Kaspar Jenny; fifth, Sadie of Fair Oak, Kaspar Jenny; sixth, North Star Posch Pulia Beets, William Bishop.

Senior yearling heifer—First, River-view Chloe Methchilde, William Bishop; second Aaggie Fayne Blossom, Hugh Nisbet; third, Lill De Kol Legis, W. K. Newell; fourth, May Pontias Wayne Korndyke, William Bishop; fifth, Magnet Ruby of Fair Oak, Kaspar Jenny.

Junior yearling heifer—First, Marilla Queen Legis, William Bishop; second, Lady Kathryn Jewel, C. S. Magee, McMinnville; third, Belle Susie Edgely, Hugh Nisbet; fourth, Model Jewel Girl, W. K. Newell; fifth, Chima-cum, Maud, William Bishop.

Senior heifer calf—First, Glencoe Lady Legis Korndyke, W. K. Newell; second, Pauline Des Landes, W. K. Newell; third, Riverview Bracelet Chloe, William Bishop; fourth, Queen Legis Clyde De Kol, Hugh Nesbit; fifth, Salem White Lady, C. S. Magee; sixth, Boss Nora Korndyke, Hugh Nes-bit; seventh, Chima-cum De Kol Ononis, William Bishop.

Junior heifer calf—First, Chima-cum Wayne Jennie, William Bishop; second, Vesper Belle Legis, W. K. Newell; third, Chima-cum Wayne Gettie, William Bishop; fourth, Lois Legis Burke, W. K. Newell; fifth, Lady Helena Pietertje, Hugh Nisbet; sixth and seventh, Kaspar Jenny.

Herds—Herd to consist of bull 2 years or over, cow 3 years or over, heifer 2-3 years, heifer 1-2 years, heifer under year; First, William Bishop, Chima-cum, Wash.; second, W. K. Newell, Seghers, Ore.; third, Kaspar Jenny, Brush Prairie. Herd 1 bull under 2 years, 2 heifers 1-2

years, 2 heifers under 1 year, all but bull must be bred by exhibitor; First, William Bishop; second W. K. Newell; third, Hugh Nisbet; fourth, Kaspar Jenny. Calf herd, 1 bull, 4 heifers, bred by exhibitor, all under year old; First, W. K. Newell; second, William Bishop; third, Hugh Nisbet.

Groups—Two animals, either sex; William Bishop first and fourth; W. K. Newell, second and third; C. S. Magee, fifth. Four animals, either sex, any age, the get of one sire; W. K. Newell, first; William Bishop, second; C. S. Magee, third, and Kaspar Jenny, fourth.

The champions were awarded to William Bishop.

## STOCK

### PRACTICAL SIDE OF SHETLAND PONIES.

(By Dr. Green, North Yakima.)

Aside from the fact that the Shetland is the companion of the child, he can be made a very useful asset on the farm.

They have not been placed in the field of usefulness because they have so long been thought of as "the child's plaything only;" and their strength has ignorantly been measured by their size.

The Shetland pony is by far the strongest of the horse family according to size. In their native country they are kept for their utility, bearing burdens and carrying loads that in America would be considered far too great.

One of the questions to the farmer has ever been, how keep the boys on the farm.

The Shetland may become a means to this end.

Our pony farm is located about three miles out in the country and is one of the most attractive places to the town boy with little or nothing to do.

We have put the ponies to use. We have a light wagon and a small plow.

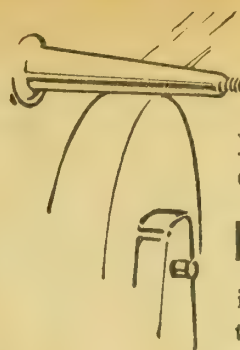
It is the boys delight to hitch a team to the wagon, go to town for a load of feed, or haul manure, while another hitches to the plow and plows in the orchard, and still another hitches to a dragtooth harrow.

Many children are each year attracted to the place just to get to pet the ponies. Or perhaps a little ride upon one of them.

During the past year the ponies have hauled five hundred loads of manure from the barns by actual count, raked between on hundred and one hundred and fifty tons of hay, plowed and harrowed the orchard, and hauled the apples to market thirty five boxes at a load, and could have hauled 60 boxes if the wagon was large enough. Besides they have hauled all the groceries and feed from town and many other things to numerous to mention.

While the ponies have been put into activity the happiness to the boys and the good influence and practice given to them cannot be measured.

There is no farm so large and doing work on so large a scale but that lots of work can be found suitable to the small boy and his shetland team. This would bring contentment,



The grindstone wouldn't wear your spindles much worse than cheap axle grease. But to use

## MICA AXLE GREASE

is real economy and wisdom. It keeps the spindles coated with a slippery, wear-resisting, heat-resisting, lubricating film. And just a little does the work—about half that of other kinds. The ground mica does it. Dealers everywhere.

**Standard Oil Company**  
(California)  
Tacoma

## BLUE BLOOD OF PONYDOM

These are the best

### SHETLANDS

for the price ever offered in the West and as good as can be found anywhere.

#### YOUNG STOCK

#### SPECIALY PRICED

We wish to send you our printed price list.

If it is bargains you are looking for, write us or see us at the Cascade International Stock Show, North Yakima, November 22-27.



## CRESTLAND FARM

Dr. Green & Son.

NORTH YAKIMA, WASH.

*Prink up your Cows with*

**SHADY BROOK DAIRY FEED**

Make them look fine and sleek and

in No. 1 condition.

You'll see a marked improvement both in appearance and in the milk pail. Remember that the quality of SHADY BROOK has built this mill into the largest exclusive feed mill in the world. We want you to try SHADY BROOK. Then we know we will gain another satisfied customer.

Write for name of nearby dealer and booklet No. 60

**ANALYSIS**  
Crude Protein - 14.75%  
Crude Fat - 1.10%  
Carbohydrates - 63.96%

**Shady Brook Milling Co. - Walla Walla, Wash.**

because of pleasant occupation which is true happiness, to your boy and his time would not be taken with idle dreaming of the allurements of city life.

### COST OF PORK PRODUCTION.

Very interesting data concerning the cost of wintering brood sows and the cost of growing and fattening pigs are given in Nebraska Agricultural Experiment Station Bulletin 147, which is a report of the North Platte Substation.

By using a large amount of alfalfa hay with a limited amount of grain the net cost of wintering old brood sows is kept at the low figure of \$1.25 each, without allowing the sow to become too thin for the best results in raising litters. On a ration containing from one-fourth to one-third alfalfa hay, young brood sows are carried from the pasture fields to the farrowing pens at a small profit and in suitable condition for farrowing

and raising fair littlers.

The average number of pigs per litter raised from old sows during a period of four years was 6.55, at a cost of \$2.11 per pig weighing 50 pounds. The average number of pigs raised by young brood sows during a like period was 6.2, at a cost of \$1.68 per pig weighing 50 pounds. The fall pig was grown to the weight of 50 pounds as cheaply as the spring pig.

When grazing on alfalfa pasture, pigs receiving 2.5 pounds of grain per 100 pounds of their weight daily have gained 0.75 pound each day. The rate of gain on alfalfa pasture bore a close relation to the amount of grain fed.

The most suitable supplementary feed to corn for fattening hogs seems to depend on several variable factors. Oil meal, cold pressed cottonseed cake, and tankage rank close together in the profits secured in nearly all tests. In some tests these by-



products give faster gains and more profit than corn and alfalfa, and in other tests the reverse is true. The physical condition of the hogs as influenced by weather and other factors seems to determine whether alfalfa hay or such a by-product as those just mentioned is the most profitable to feed with corn for fattening hogs.

Ground wheat either soaked or moistened gives faster gains with less grain for 100 pounds of gain than corn, but corn gave faster gains with less grain for 100 pounds of gain than whole wheat either soaked or dry. Soaking wheat increased its feeding value only slightly, but grinding the wheat increased its feeding value about one-fifth.

For growing pigs on alfalfa pasture and fattening them when having access to alfalfa hay, a grain ration of corn proved more efficient than a grain ration of two parts corn and one part shorts.

Experiments in cooking alfalfa hay for hogs indicate that the feeding value of the alfalfa may have been increased slightly by the cooking, but not sufficiently to offset the extra cost.

The summary indicates among other items that with corn valued at 60 cents per bushel the cost of feed alone for producing a pound of pork is about 5 cents.

## LIVE STOCK AND MEAT SUPPLY

### Boys and Girls are Taking Interest.

In the annual report of the Secretary of Agriculture, the live stock and meat supply is given considerable attention.

Among the most promising agencies for increasing the meat supply are the pig clubs. These now have a membership of about 9,000 boys and girls and over 2,000 registered hogs are owned by the members. Poultry clubs also have received much attention, the membership now being approximately 4,000. The report continues:

"Last year the ease with which the meat supply can be increased materially by controlling or eliminating the common live-stock diseases was pointed out. The direct losses from them are enormous. It is impossible to give any accurate statement even of direct losses. The indirect losses, which also are great, can not be estimated at all. It has been conservatively estimated, on the basis of data for 30 years, that the annual direct losses from animal diseases are approximately \$212,000,000. The loss ascribed to each disease is as follows:

|                                    |              |
|------------------------------------|--------------|
| Hog cholera .....                  | \$75,000,000 |
| Texas fever and cattle ticks ..... | 40,000,000   |
| Tuberculosis .....                 | 25,000,000   |
| Contagious abortion .....          | 20,000,000   |
| Blackleg .....                     | 6,000,000    |
| Anthrax .....                      | 1,500,000    |
| Scabies of sheep and cattle .....  | 4,600,000    |
| Ganders .....                      | 5,000,000    |
| Other live-stock diseases..        | 22,000,000   |
| Parasites .....                    | 5,000,000    |
| Poultry diseases .....             | 8,750,000    |

"The necessity for vigorous prosecution of work to prevent these losses is obvious.

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

### GARDEN PEAS FOR HOGS.

That the cultivation of Early Dwarf garden peas for hogs is the biggest thing in the agriculture of the northwest today, is the opinion of Newton Hibbs, of Salmon, Idaho, writing in the Agricultural Age. The garden pea is the most prolific and the most valuable grain crop that we can grow. It is a perfect soil restorer that can be grown under dry farming conditions. The pea is the only hope for Inland Empire grain farmer who has been robbing his soil for a quarter of a century.

The Early Dwarf garden pea will mature in the grain belt and yield as much grain as wheat, barley or oats, and it will make the soil richer every year. While this legume is restoring the lost fertility it will make pork worth \$40 to the acre at a cost of \$10 an acre.

Under a perfect system of irrigation I grew this year 4400 pounds of peas to the acre. The wheat lands of the Palouse country will produce, with the usual labor done on a summer fallow field, 40 bushels of peas to the acre. This crop will produce 800 pounds of pork by the cheap method of hogging off the crop. For the wheat-land conditions a dwarf variety of peas should be selected, an early variety of wrinkled peas like the Gem or Advancer.

The peas should be sown as early as a good seed bed can be prepared in drills two feet apart. Spring frost does no harm to this crop. The early weeds can be killed with a harrow before the peas come up. A cultivator can be run once or twice between the rows while the peas are small. The late weeds will not reduce the yield of peas. One hundred pounds will seed an acre.

Under our northwest field conditions the Early, dwarf, wrinkled varieties will yield fully double what could be obtained from any of the field peas. The dwarf garden peas are developed to produce the greatest possible amount of grain while the field pea is a forage plant developed to produce hay.

My method of harvesting peas which I use for seed is as follows:

I let my peas get very ripe in the field, and then in the morning hours, while the vines are damp from dew, I take a strong two-horse hay rake, windrow the peas without reaping or mowing them. The ripe pea vines are not attached to the ground much more than are tumble weeds. The rake picks them up almost perfectly if the vines are ripe. But if some of the peas are left the hogs will take care of them.

This method of harvesting is of great importance to the ordinary pea grower. It is original with me, and the trick has saved me much expense and trouble. It might not be possible to do this in some other districts. The peas may be left in the field here for a month after the vines are dead, without any injury to the seed.

The peas may be threshed with the ordinary machine or with a flail.

### WORLD'S NEW RECORD HOLSTEIN.

John B. Irvin, Minneapolis, Minn., owns the new world record cow, Duchess Skylark Ormsby, Holstein, whose milk yield for one year is 27,761.7 lbs., testing 4.32 per cent. butter fat. Her total butter production for the year was 1205.091 lbs.

She started with 34.36 lbs. butter in 7 days and finished her eleventh month with 23.74 lbs. butter in 7 days. She consumed ordinary commercial feeds, such as is within reach of every dairyman. She is the product of careful breeding for several generations.

### LIVE STOCK SALE, PORTLAND.

The live stock sale at the Pacific International, Portland, Oregon, was a success. The Herfords averaged \$316.

The Shorthorns were popular and brought better prices, the top being the sire Golden Goods, Jr., sold by Frank Brown, Carlton, Oregon, to Ormondale Farm, Redland, Cal., for \$1200.

The Holsteins also sold at fair prices throughout, the buyers all having in view good dairy work bought largely on merits of the stock as producers, indicated by their pedigree records and appearance. The opportunity to buy young males out of high record ancestry at these sales is not fully appreciated by many dairy farmers who could grade up their herds to good advantage. "To long to wait" is one excuse, but financiers are more ready to cooperate with dairymen who want to improve their dairy herds than those who do not, and the same may be said with reference to the beef stock.

These public sales show the pulse of the purebred live stock market, serving as a guide for private sales, and gives breeders some idea of what course to pursue in their future endeavors.

### WINTER SCHOOLS.

Winter short course schools of agriculture, horticulture, forestry and domestic science will be held in the State College, Pullman, Wash., January 3 to February 11, 1916, also at Puyallup, Wash. Write to Supt. W. A. Linklater, Puyallup, for particulars as to dates, etc., for the Western Washington school.

The entrance requirements at these schools is a seriousness of purpose, with the ability to read and write intelligently and to work ordinary problems in arithmetic. All courses are open to anyone above the age of 16.

The object is to afford opportunity for those who cannot pursue a regular school course of study, to acquire some knowledge, briefly, of the latest and most practical methods pertaining to the industry and business of farming.

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selling our new unequalled gasoline table and hanging lamp for lighting city and rural homes, stores, halls, churches. Most powerful light known. **ABSOLUTELY SAFE.**

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704 Factory Bldg., Kansas City, Mo.



**3 BIG BARGAINS**

Engines, Spreaders, Separators. Highest quality. Prices about 1-3 to 1-2 less than you usually pay. 200,000 customers testify to our business design and best price. Catalog free. Write Galloway Co. Box 2327 WATKINS, IOWA.



### SUNNY BANK JERSEY FARM

Island Type Imported Jerseys. Great producers, vigorous and strong individuals for heavy dairy work. Young stock of both sexes offered. Prices reasonable considering quality.

**HARRY WEST,**  
Scappoose, Ore.

Please mention this paper when writing.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

**HIGHLAND FARM,**  
Box 56 Underwood, Wash.

### GOOD REGISTERED BERKSHIRES —

Choice pigs, \$10 each at weaning time. **W. D. GOOD,** Mt. Vernon, Wash.

### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**  
Route 1 Everson, Wash.

## GOATS

Westfold Farm thoroughbred registered Angoras. Choice stock at low prices. Also high grade Toggenburg milch goats from noted thoroughbred buck "Plan-chon" A. M. G. R. 497. Address

**DAVID WHITCOMB,**  
Arcade Building, Seattle

## BERKSHIRES

Pure bred, both sexes, young stock. Prices reasonable. Write for full particulars. Satisfaction assured.

**HOMER NELSON**  
Marysville, Wash.

### Registered Duroc Jersey Hogs

Thrifty, prolific strain. Bred sows for autumn and winter delivery.

**J. Hanks & Sons** Ellensburg, Wash.

**SILVER BIRCH FARM**

**BERKSHIRES**

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**CHAS. M. TALMADGE**

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**RAT AND MOUSE**

**CATCHER**



### Caught 51 Bats in One Week

Trap resets itself; 22 inches high; will last for years; can't get out of order; weighs 7 pounds; 12 rats caught one day. Cheese is used, doing away with poisons. The trap does its work and never fails and is always ready for the next rat. When rats and mice pass the device they die. Rats are disease carriers, also cause FIRES. Rat catcher sent prepaid on receipt of \$3. Mouse catcher, 10 inches high, \$1. Money back if not satisfied.

**H. D. SWARTS,**

Inventor and Manufacturer of Universal Rat and Mouse Traps, Box 566, Scranton, Pennsylvania.

**MYERS**

Famous Lock Stitch

**SEWING AWL**



Sews Leather Quick

### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### POULTRY INDUSTRY DEVELOPMENT.

Capt. A. Waldwick, the successful chick hatcher and poultryman of R. D. 3, Tacoma, is of the opinion that the market for eggs during the coming season will average a little higher and the demand be greater than for several years past. It is evident that a considerable number of egg farmers are of the same opinion, for a large number of orders for day-old chicks are already being placed.

The question of net profit from egg farming depends on good, producing stock, common sense attention and a low feed cost. Successful poultrymen doing their own hatching are selecting the male birds not only of good standard type, but insist also that the flocks from which they are obtained shall have some good laying records.

A common error made by many Coast section farmers who keep poultry, is to presume that fowls can find shelter most anywhere. In this country of frequent rains we need very adequate shelter. Shingles are not expensive. Make ample roofs to protect poultry or stock. Very much of the time fowls will do well to be out in the open where green feed is available through much of the winter, and as soon as showers begin they will go under any shelter that has been provided, presuming, of course, that the necessary grain feed is being supplied.

Now is a good time to figure and plan for as low a feed cost for next season as possible. Nearly every fruit or dairy farm has small patches of ground where some hullless barley and peas could be grown. Perhaps with a little effort some stumps could be pulled out and though the space is only a few square rods, something that will reduce the feed cost of poultry should be sown. Seeding and cutting or harvesting, is the main part of the work or expense, for the fowls will cheerfully do the threshing. Where it is not possible for the fruit grower or dairyman to grow any grain, he should figure at least on ample supply of green stuff. The variety relished by poultry is so great there is no excuse for anyone in the country attempting to raise poultry, to be short of green feed, such as either clover, Essex rape, kale, cabbage beets, or any of the grasses grown in this country. In many instances poultrymen find it most practical to buy wheat and other necessary grain. The mixed grains put up by various supply firms are good and where arrangements are made to buy in good sized lots the prices can be made on same market basis as for a single variety of grain.

#### Cooperation Among Poultrymen.

From numerous localities comes an expressed want of cooperation among poultrymen. There is a general feeling that a system is now required with arrangements for adherence to it. Groups or communities will endeavor to produce enough eggs of a standard quality and uniformity to attract buyers from a large market.

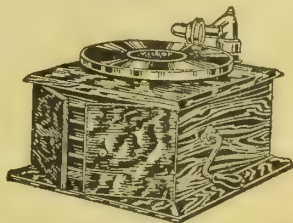
There will be unity of purpose and action, both in selling and in buying in each community. Steps are being taken now to perfect such cooperative associations in numerous localities. The initiative comes from the right source, the movement is timely, and we urge upon our readers to join in any get together movement that is being started in their respective communities to enhance the egg farming industry for the benefit of each individual member participating.

### TACOMA POULTRY SHOW.

The 22nd annual poultry show for Tacoma opens Monday, December 28, in the Betz Block, Pacific Ave. Write at once for catalog and blanks to Secretary William Shepherd, Sumner, Wash. Prospects are that entries will be many, and that the quality of stock shown will be first class. There is a buoyant feeling among poultrymen that the chick and egg industries will improve the coming year.

## THE IDEAL XMAS GIFT

Something the whole family will appreciate the year 'round.



This Victrola IV, and 6 selections for \$17.25.

We have them all—Victor, Columbia and Edison Diamond Disc Phonographs.

Talking Machine Headquarters.

**Tacoma Eilers Talking Machine Company**

Temple of Music.  
943 Broadway.  
Tacoma, Wash.

#### IMPLEMENT FIRMS AND FARMERS

Many of the farm implement manufacturers and dealers are cooperating with farmers in a very helpful manner. Representatives of several firms whose advertising appears in this paper from time to time, disseminate valuable information as they travel among farmers, relative to modern, practical methods, and their implements are usually placed to do satisfactory service.

Pointers are often given an individual farmer or a community of producers, which start some get-together movement, that provides for an improved financial system, thus leading to a more satisfactory margin of profit for the individual. Our readers will discriminate between those repre-

## CALL OF THE HEN

A most valuable book on poultry, the result of 25 years' careful experiment along the lines of selecting and breeding for high egg production. The illustrations so clearly indicate methods of procedure that any farmer having poultry can follow directions given and obtain results which will very soon more than pay cost of the book. The author, Walter Hogan, has a 1000 flock of 200-egg hens, from careful work of selection and breeding, proving his plan. The book has been approved by leading poultrymen all over the world.

It contains 126 pages, 52 half tones, 15 charts.

The retail price of this book is now \$2. For a short time we are making a special combination, profit-sharing offer to credit any purchaser of the book with two years' subscription to the Northwest Horticulturist & Dairyman, for the \$2. After a thorough examination of the book, if not satisfied return it in good condition and the money will be refunded.

**Northwest Horticulturist & Dairyman**

Box 1604, Tacoma, Wash.

**An Honest Incubator At an Honest Price**

Hot Water, Copper Lins. Self Regulating, Chick Nursery, Safety Lamp, tested thermometer, best construction of three walls all over with asbestos between each wall. So simple that anybody can make big hatches. Get our catalogue and low delivered price. Brooders from \$2.75 up.

**St. Helens Incubator Co., Toledo, Washington**

### 50,000 WHITE LEGHORN CHICKS

Bred for eggs—the kind that make the chicken business a success. Hatchery starts Jan. 1st. Book your orders with us now.

**ST. HELENS INCUBATOR CO.**

Box 9—H

Toledo, Wash.

## BABY CHICKS

from my 3000 S. C. White Leghorns

means that they are well hatched, from strong, hardy stock, bred for egg production, vigor and good size. I guarantee safe arrival in good condition all chicks you order. Also send free with every order my book on "Raising the Chicks."

Price to May 1st, \$11.00 per 100.

Orders of 1000 chicks and over, \$10.50 per 100.

Write now for free catalog with over 100 testimonials.

**Oak Heights Poultry Farm**

**CAPT. A. WALDWICK, Proprietor**  
R. F. D. 3, Box 67A, Tacoma, Wash.

## JUBILEE INCUBATORS

Are consistent, reliable and moderate priced hatchers. Are you preparing to incubate; then send for a free catalog which gives information, you should know before making any purchase. Please mention this paper.

**J. L. CRAIB,**  
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## -TANCRED-

**THE TRAP NESTED WHITE LEGHORNS**

TRAP NESTED CONTINUOUSLY SINCE JULY, 1905

**BREEDING STOCK**

HENS--PULLETS--COCKERELS  
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THE TANCRED FARMS - - - KENT, WASH.

## Substantial Satisfactory CROSSCUT POWER SAW

Price and full particulars on application



**Doud MacFarlane Machinery Company** 15th & Dock St. Tacoma Washington

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sending substantial firms and those who are promoters, endeavoring to sell articles or stock of questionable

value. The cooperation help from our leading implement firms is much appreciated by farmers in general.



# KAR-NITUM

## A REMEDY FOR TUBERCULAR CATTLE

Kar-Nitum is a scientifically prepared remedy for the prevention of Tuberculosis in animals, and the relief of the disease, in the early stages. It penetrates the nerve centers, and causes a reaction of the vital force, produces a proper digestion and assimilation of natural elements and food substances, fortifies the system against disease germs and their toxins. By its action, it reaches the source of trouble and eradicates the tubercular germ. It acts as a preventative.

The discovery of Kar-Nitum marks an epoch in veterinary practice. It makes possible the eradication of tuberculosis in cattle, which the scientific world had considered impossible.

History traces the disease from the earliest times, but has failed to record a remedy capable of removing the cause and preventing tuberculosis in the animal system. Millions have been spent, and great sums are appropriated yearly by Federal and State Governments for laboratory investigation and experiment, and for carrying on the work in other directions; yet in 1914 the estimates show a loss of twenty-five million dollars in value of cattle from this disease alone in the United States.

We are confident the remedy has been found in Kar-Nitum. As it becomes known and its use general stockmen and the world at large will get the benefit.

The greater value of Kar-Nitum is in its power of prevention; for the tubercular germ, if it enters the system, cannot live under the action of the remedy. In most cases, the early stages of tuberculosis cannot be detected in animals by visible signs. An animal may be affected for months or even years and spread the disease throughout the herd before any physical signs are noted. This slow and hidden development is the cause of the great loss to stockmen.

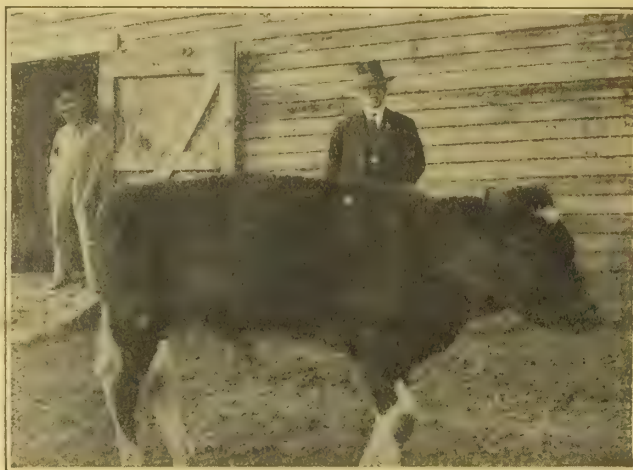
By using Kar-Nitum as a preventative, the insidious disease is stopped at the threshold; the animal's system is put in order, its functions are brought to a high state of efficiency, pure milk and a healthy source of food supply are assured and financial loss is avoided.

Stockmen have noted a marked improvement in the quantity and quality of the milk supply when Kar-Nitum is used as a preventative. This is due to the beneficial effect upon the constitution and general health of the animal.

Experiment shows that tubercular cattle in the early stages of the disease, as indicated by the tuberculin test, if put under Kar-Nitum treatment, will cease to react in from three to six months, through a process of calcification which causes the bacilli to become inert.

In an additional three to six months the lesions seal, new tissue forms, the calcareous barrier becomes thicker and harder, forming a prison wall around the bacilli, which die.

Before and After Using KAR-NITUM 60 Days.



Holstein Calf owned by David Monroe, Spokane, Wash. What will you give for him?



The same calf shown above, taken about 60 days later. Treated with Kar-Nitum. If you buy him it will be at a long price.

PREPARED BY THE  
**KAR-RU CHEMICAL CO.**  
P. H. HEBB, President TACOMA, WASH.

By this method the disease germ is eradicated, and the system restored to order.

The primary object of Kar-Nitum is the prevention of disease, rather than its relief. Protect your young and old stock.

### READ WHAT KAR-NITUM HAS DONE

PORTAGE, King County, Wash., Oct. 21, 1915.  
To whom it may concern:

In order to test out the claims made for Kar-Nitum, I began six months ago giving the remedy to one-half of my Jersey herd.

A complete daily record for quantity and quality of milk of these animals had been kept for the past three years. The value of the product of each animal is recorded.

I wish to certify that under the action of Kar-Nitum, the increase in product shows fifteen per cent. in milk, and ten per cent. in butter fat.

The physical condition of the animals under treatment has been perfect. I now have my entire herd on the remedy.

My herd sire, St. Helier Alex. No. 90434, became impotent a couple of years ago. Three months treatment of Kar-Nitum completely restored his vital powers. He is in perfect condition for service today.

The price of the remedy is returned many times in additional milk and butter production. As a system builder and disease preventative, it has no equal.

I endorse and recommend the remedy to every dairyman.  
F. W. CURTISS

TACOMA, WASH., August 25th, 1915

To whom this may concern:

This is to certify that two of my heifers were pronounced tubercular last January, both reacting to the tuberculin test. These animals were then given Kar-Nitum for ninety days and retested. Both did not react, and showed to be in perfect condition. I hold a clean health certificate for them.

Kar-Nitum is a wonderful remedy. I am now giving it to all of my cattle.

ANTONE PORTMAN

### EASY TO ADMINISTER.

Kar-Nitum is put up in powder form, powders numbered consecutively from 1 to 12, which are given dry in mouth every fifth day when animals are diseased. Every tenth day when used as a preventative.

The remedy may be administered in a mash of shorts and water, equal parts. Mix powder in each animal's portion, using about one cup full of the mash, and feed separately.

Care must be exercised in giving each animal the full dose.

Each box contains enough Kar-Nitum for six months treatment for one animal is affected. Enough for one year if used as a preventative.

Price Per Box, \$5.00

## Pure Bred O.R.O. Holsteins, Pontiac & Dakol Breeding

Heavy Milkers.  
Many half sisters to world record cows.



A Large  
Herd  
from which  
to select.

Our dairy herd is rich in the blood of Pontiac, Korndyke, DeKol and Ormsby breeding.

A very large proportion of our cows have A. R. O. records and every one in milking condition is making a very satisfactory margin of profit.

Our entire herd is vigorous and developed for long time profitable dairy work.

From many years' experience we have found that dairying is profitable in proportion as cows of a fixed standard of production are bred and kept in the herd. For years our sires have been selected with that purpose in view.

The prices bidders at the sales have made when taking

**A. E. SMITH CO.**

over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

**White Bldg. Seattle or Sumas, Wash.**



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JAN 26 1916

# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

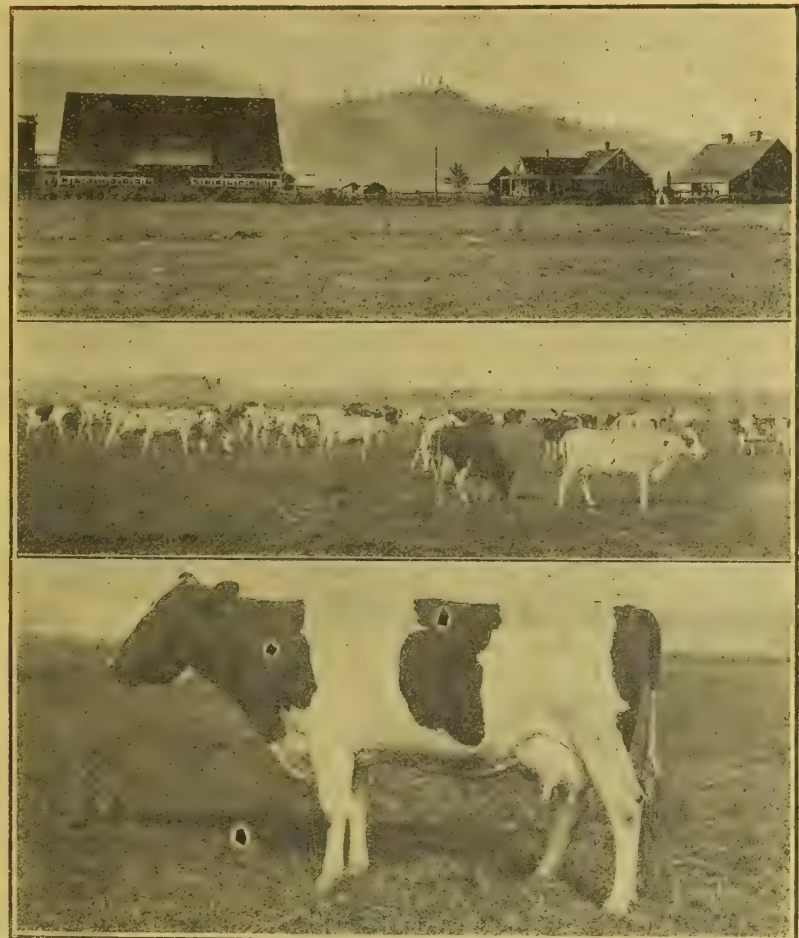
Twenty-ninth Year TACOMA AND SEATTLE, WASH., JANUARY, 1916 No. 1

## DAIRYMEN STANDARDIZ- ING THEIR INDUSTRY.

In an address before the meeting of the Washington State Dairymen's Association at North Yakima, two years ago, the writer advocated that a broader scope of work be undertaken than that which is primarily educational, very needful at first and which had predominated for twenty-one years. The idea presented was in the main that more attention should be given to business affairs, seriously considering problems of vital importance to dairymen such as co-operation, credit extension, standardization, and the marketing of dairy products, and that such undertakings might be made through properly appointed committees. This feeling for needed change to more aggressive work strictly in the interest of dairymen, became so intense that at the last meeting held at Snohomish a reorganization took place. The dairy industry itself has now been standardized and will include only dairy farmers whose annual dues are one dollar each, as active members. The association now proposes to organize the various counties into subsidiary organizations and these are to deal with educational questions and financial problems which are purely local. The combined efforts of these local organizations being directed for the general improvement of the quality of dairy products so that with a better grade of milk, butter and cheese the dairymen may obtain a more dependable market and remunerative price.

The association as now organized will assume the position of principal, calling on its servants the staff from the educational institutions when it requires assistance they can render. It will make use of the veterinarians in a manner to deal fairly and justly with dairymen, observing proper care for the health of their patrons. The association will endeavor to secure a sufficient membership to make itself a power in matters of legislation, standardization, rural credit systems, and in the marketing of its products.

From its strictly dairy farmer position while maintaining independence, it will work with other organizations and institutions co-



Partial view of the dairy barns and registered Holstein herd of the A. E. Smith Co., Sumas, Wash. A number of these cows are half sisters to world's record producers and the entire herd affords its owners a satisfactory margin of profit from the dairying standpoint.

operatively, in matters which pertain to the general welfare of all, but assumes to remain in complete control of its own premises.

The officers elected and who will have charge of the work are Fred Mess, Orillia, president; Frank Holland, Dungeness, Vice-pres.; and H. C. Davis, Wm. Bishop, J. C. Burnam and C. W. Orton, directors. The secretary and the county organizer are to be appointed by the president.

Other important features contained in the constitution provide that any person may become an honorary member but only dairy-farmers will have voting power.

The board or directors consist of seven members including the president and vice president. Four members of the board constitute a quorum.

The duties of the county organizer is to organize the dairymen of the various counties into subordinate organizations to the

state association, and they are entitled to representation of two delegates and one additional for each ten members. The county associations will bear the pro rata expense of the state association on the basis of 50 cents for each member of the local association.

### TAXES EVER PRESENT.

People who have little or no property sometimes vote for measures which will increase taxes, on the supposition that those who do own property can afford to and will be compelled to pay them, without giving full consideration to the merits of the proposition involved. For instance non-property owners in cities frequently vote for improvement in order to obtain employment. The tax is first paid by the real estate owners, who then increases the rent of their tenants and the merchants in turn charges the laborer, on an average, a little more for goods

sold. But a worse ever present tax is inefficiency and carelessness on the part of producers. Take eggs as an example. Millions are sent to the markets eventually unfit for consumption. From the time they leave the producer bad eggs become a tax which effect all engaged in the industry. There is the loss in freight, loss in storage, expense of candling, and last but not least, under consumption. It behooves every enterprising citizen therefore to co-operate with others in his community to properly standardize the egg production industry, for anything short of adherence to a good system contributes to an unnecessarily expensive channel between the producer and consumer that is equivalent to a tax on both.

The fruit growers on the Pacific Coast have made wonderful progress during the past few years. Their output is well standardized and they realize that failure to adhere to established methods and rules involves a heavy tax on themselves.

The dairymen are moving forward slowly. Wherever there is a good co-operative creamery the standard is generally high but the promiscuous exhibits of butter at the fairs last fall indicate that too large a per cent. of dairy farmers in the Northwest do not realize the tax they are imposing on themselves and on their communities for placing on the market butter that falls considerably below 90 per cent. in the score of perfection. This is an unnecessary ever present tax which can be alleviated by education and gentle but firm pressure on the part of inspectors with power to act. With untiring vigilance on the part of those who know how, dairymen as a whole will soon reach and maintain the desired high standard.

Wrong policies in governmental affairs is perhaps the worst of all taxes. That is attested by the entire world today. There appears to be no chance to get away from taxes. They are necessary for progress and improvements and imposed to correct wrongs and all must bear a part. There is no getting away from man's duty to be continually at the work of making straight the crooked places.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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early and select with reference to  
quality.

Plant at least some one ornamental  
tree, shrub or flower, and more if  
your conditions warrant, to make the  
rural home and its surroundings  
more attractive. Those who give at-  
tention to this matter find it repre-  
sents time and money well spent.

The Western Washington Experi-  
ment Station, Puyallup, is carrying  
on some valuable demonstration work  
to solve the problem of making  
poultry raising a profitable adjunct  
to fruit growing. An experiment with  
"covered shed" as a substitute for  
the common dairy barn is also being  
carried out. Their January Bulletin  
No. 10 contains information on these  
subjects, also on the Feeding of  
Dairy cows; Plant Propagation by  
Cuttings, and on the Choice of Crops.

It is a good time to earn a little  
cash money by getting a few subscrib-  
ers. We have some good cash propo-  
sitions to offer. Write us for particu-  
lars.

The blue cross (X) mark opposite  
your name on the label of this paper  
indicates that subscription is now  
due. The rate is 50 cents for one year  
or three years for \$1. The 1916 year of  
this paper will contain much valuable  
information in condensed form design-  
ed to be truly helpful to readers in  
the rural districts.

## FAT STOCK OUTLOOK.

Hogs and cattle are on the up  
grade market in the Pacific North-  
west. Indications are that the aver-  
age price will be a little higher  
than last year. The important point  
for the farmer is the actual cost of  
production under his given condi-  
tion. Now is a good time to make

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

plans for the years feeding crops,  
figure accurately to include the grow-  
ing, harvesting and storing of what-  
ever crops are necessary to keep the  
animals intended for the block, gain-  
ing about an average of a pound a  
day. If the conditions subject to con-  
trol do not hold out any inducements  
for a reasonable profit margin, then  
keep out of that particular line and  
plan to ascertain what can be raised  
with satisfactory results.

## TARIFF COMMISSION.

The Tariff Commission League  
wants a tariff commission of seven  
members appointed in which the in-  
dustry of agriculture, industrial labor,  
manufacturers, trade and commerce,  
educational institutions, science and  
inventions, and tariff classification  
shall all be represented, no one  
political party to have a majority.

When enough voters throughout  
the country express their wishes on  
a measure of this kind no doubt but  
congress will act accordingly.

## WOOL PRODUCTION.

The production of wool in the Uni-  
ted States in 1915 was 288,777,000  
pounds, about one and a half million  
less than in 1914, and over seven mil-  
lion pounds less than in 1913, but the  
price in 1915 was 23.4 cents per  
pound, which was 4 cents better  
than in 1914 and a rise of 7 cents  
over 1913.

The leading wool producing states  
in the west are Wyoming, Montana,  
New Mexico, Oregon, Idaho, Utah,  
California, Texas, Nevada, Colorado,  
Arizona and Washington. There is  
room for much larger production of  
wool among our Washington farmers.  
Mutton has been a leading product  
from this state, but as lands are be-  
ing divided up, a larger number of  
small flocks will be kept and both  
the wool clip and mutton should in-  
crease with profit.

One farmer in the Northwestern  
part of Washington stated recently  
that with lambs at \$7 per head there  
is more money in sheep compared  
with labor and expense involved than  
from any other class of live stock.  
An Idaho farmer recently sold a large  
band of ewes at \$7.50 and lambs at  
\$7 per head and only good grades at  
that.

A leading authority predicts a con-  
tinued high wool market with mutton  
a luxury to many. Already efforts have  
been made to contract the 1916 wool  
clip at 25 cents per pound without  
success. Those who have room for  
small flock of sheep may do well to  
make good fence inclosures and pre-  
pare to raise them.

## POULTRY ASSOCIATION AT PUYALLUP.

Temporary organization of a poul-  
try association was made early this  
month at Puyallup in response to a  
called meeting by Mr. W. H. Paul-  
hamus. The berry growers came  
out in good numbers showing strong  
determination to combine poultry  
raising and berry growing which  
they can do with a good measure of  
profit for themselves.

Mr. R. V. McBride, chairman, pro-  
tem, stated that from many years  
experience with poultry in a number  
of states, Washington had advant-  
ages which will make it a leader in  
egg production. Some of the most  
favorable points are, evenness of cli-  
mate, opportunity for green feed every  
day in the year, close proximity to

grain fields, abundant lumber for  
buildings at low cost, young stock  
easily well developed and the best  
of markets close at hand.

The members of this organization  
will unite to buy building material  
for poultry houses at a very low  
figure and their grain at lowest  
wholesale rates. In fact, they will  
trade Logan berry and red rasp-  
berry juices to eastern Washington  
farmers for grain that will produce  
eggs and increase the fertility of  
their berry soils.

They will standardize the egg farm-  
ing industry as they have berry  
growing and attract markets which  
are offering satisfactory prices and  
are dependable.

## GOOD FEEDING FOR HEALTH.

Out of 58 million meat animals  
slaughtered under Federal inspection  
last year there were only 1½ per  
cent. condemned in whole or in part.

The chief malady was tuberculosis  
and this condition is prime evidence  
that good feeding is conducive to  
health. By good feeding is meant  
the proper nourishment of the tissues  
including the minerals which are  
necessary for the formation of bone  
as well as the feed which makes the  
heat and the fat. To prevent tuber-  
cular dairy cows dairymen might note  
these suggestions to give more care-  
ful attention the feed and its com-  
position.

## PROPER STANDARD OF COWS.

Speaking about a profitable cow  
and a satisfactory market at the  
recent dairymen's meeting, Mr. J. C.  
Burnam considered it necessary to  
have the minimum capacity of the  
mature cow 400 pounds fat during the  
year. The average price for butter  
fat in Seattle, last year, was 30 cents  
and thus a cow of this standard  
would produce \$120 besides the value  
of skim milk. According to the price  
of cleared land within range of the  
market, figured by Mr. Burnam, it is  
evident that dairying cannot be car-  
ried on profitably with cows of less  
capacity than 400 pounds. Those  
who dairy profitably with 300 pound  
cows must be on land of less value  
which means farther away from mar-  
ket. High rents, or taxes on high  
valuations together with steep prices  
for feed is compelling dairymen to  
discard producers which are below  
a certain standard. The sooner a  
dairy farmer ascertains the exact  
producing capacity of each of his  
cows and figures all expenses to  
determine the lowest amount of pro-  
duction at which he can safely oper-  
ate, then will he be able to choose a  
way to prosperity.

## SILAGE A BASIS FEED.

Dairymen in the Pacific Northwest  
consider themselves very fortunate to  
have practically demonstrated in this  
section that by making use of the  
silo the cost of the feed is cheapened  
perceptibly. And that by siloing  
any crop as the vetch-grain mixture  
which is cut in spring, or the corn  
which is harvested in the fall, and  
fed as a basis in connection with  
hay, that it becomes a problem of  
easy solution to add other concen-  
trates to make up a balanced ration.

While in California some of the  
dairymen seem to substitute dried  
beet pulp for silage, dairymen in the  
Pacific Northwest find best results  
where these two excellent feeds are

both used. A considerable number  
of dairymen here substitute beet pulp  
for bran as a conditioner feeding  
it also, because it contains a high  
per cent. of carbohydrates while  
the feed we naturally grow here is  
rather low in carbohydrates but con-  
tains a high per cent. of protein.  
Even with the most corn silage that  
dairy farmers of the coast section can  
produce, in connection with the  
clover, vetch, peas and grass crops  
raised, they still require more of the  
carbohydrate element to make an  
economical and satisfactory milk ra-  
tion. Therefore preparations are be-  
ing made to put in a very large  
number of silos this year to preserve,  
first, the spring fodder crop, usually  
cut the last of May or early in June,  
and second to silo, the corn, of which  
thousands of acres will be planted  
this spring.

A farmer in one of the irrigated  
districts has made inquiry about the  
practicability of growing Kafir corn  
and alfalfa for silage, as the Kafir  
appears to succeed better under his  
conditions than the ear corn. Kafir  
makes good silage, almost equal in  
feeding value to other corn according  
to experiments in Kansas. It can be  
made into silage by itself or siloed  
together with alfalfa providing the  
two crops are so timed when planted  
that they mature at the same dates.  
The alfalfa should be in the stage to  
cut for hay and the Kafir nearly  
ripe. If either or both crops are  
too ripe water may be added when  
being packed in the silo.

These crops should be run through  
a cutter and mixed as they are put  
in. Otherwise it is better to silo  
the Kafir by itself and make hay  
of the alfalfa as the latter does not  
make the best silage unmixed. In  
the arid sections dairy farmers are  
obtaining good results from wheat  
made into silage, also from barley  
silage and consider these crops, in  
certain districts, better than corn.

There is hardly a locality but  
where the silo is now considered an  
essential in the economical produc-  
tion of feed and silage generally is  
figured as a basis feed to be supple-  
mented with what other products that  
will best serve to make the most  
economical and satisfactory balanced  
ration.\*

## IRON AFFECTING FRUIT QUALITY.

An Experiment Worth Further Con-  
sideration.

Overlooking the valley of the North  
Fork of the Kettle River, a few miles  
above Grand Forks, B. C., there is  
a mountain called Volcanic Mountain,  
in which there is a large percentage  
of iron. At the base of this moun-  
tain, which is passed by the Kettle  
Valley railway, there are many tons  
of red dust, consisting largely of iron.  
A few years ago, Mr. A. D. Morrison,  
a vineyardist of Grand Forks, who,  
besides growing Concord and other  
grapes, grows apples, determined to  
try an experiment with the dust from  
Volcanic Mountain, with the object  
of finding out what effect iron would  
have on the coloring of apples.

He had two apple trees, of the  
wealthy variety, which were of the  
same age, and apparently similar in  
all respects. He placed some of the  
iron dust at the roots of one of the  
trees, but none at the roots of the  
other. When his apples ripened in  
the fall, he found, as he expected,



that there was a distinct improvement in the coloring of the apples from the tree which had the iron dust at its roots. He also found that the iron had another unexpected and marvelous effect. The apples from the tree with the iron dust at its roots lasted two full months longer than the apples from the other tree.

This discovery was a matter of great importance to Grand Forks, as the orchards of the district now contain nearly two hundred thousand apple trees, and furnished in 1912, according to the report of the Provincial Department of Agriculture, nearly one third of all the apples produced that year in British Columbia. The great beauty of the coloring for which the apples of the district are noted is, without doubt, partly due to the presence of iron, to a greater or less extent, in most of the soil there.

The results of Mr. Morrison's experiment are, however, of equal importance to the apple growers of Ontario, since large quantities of iron filings, says an exchange, annually go to waste in this Province, which might be used by them, and there are also immense quantities of scrap-iron, which might be put into such a form that it could be used.

The experiments with different mineral elements in connection with fruit growing will be given more attention by our experiment stations if such request is more general on the part of the fruit growers. Recently the station at Corvallis, Oregon, has reported that fruit trees are affected from applications of sulphur, but to what extent and for what valuable purpose is yet a problem to be determined. It is well known that applications of lime to the soil also affects the fruit produced. Phosphate is an element used by rose growers to intensify color and experiments might be made with it in the orchards where color on fruit is deficient.

Our station workers will first work out the modifications which these elements causes and to what extent they might be applied where needed, and finally, whether or not applications would be economical or profitable and if so, under what conditions.

## PRACTICAL HELPS TOWARD STANDARDIZING THE EGG INDUSTRY.

By Mrs. Geo. R. Shoup.

If the egg producers of this country could have it pounded into their consciousness that they loose millions of dollars by their carelessly offering eggs that are below par, to the consumer, I wonder if they would put the shoe on or just turn the other way and say it fits the other fellow?

A few eggs spoiled in a nest, a few more cracked in packing, a few "banty" sized ones packed, and a dozen or two heated doesn't impress the average producer with his loss. He sees he is not getting as much out of his chickens as is the egg specialist, but he has an idea the other fellow has some pet scheme up his sleeve, that he keeps a deep, dark and hidden secret.

The present consumption of eggs is enormous, but if there were confidence in the egg market, twice as many eggs would be used. Do you suppose that a customer who has had stale eggs served on a short order at a restaurant, is likely to

repeat that order till time has dimmed his memory? No indeed! One such experience is enough to queer his taste and that of his table companions, for some time. The consuming public looks upon the average egg with suspicion. "A burned child dreads the fire."

It is high time that we make an educational campaign all along the line. If ranchers and dealers were better informed about right methods of production and handling of eggs, a more wholesome article would be



Quarters Occupied by 100 Pullets Composing Pen 2—(A) Rear view of semi-monitor house. Note windows near the floor; (B) Front view of the same house. Note the muslin curtain; (C) Flashlight picture of interior taken at 8:15 P. M., December 13, at the Western Washington Experiment Station, Puyallup. (By permission.) (See page 21)

offered the public, with the resultant increase in sales, and satisfied customers.

We loose not only the cash value of the eggs, but also have to pay for the army of candlers necessary to sort out the eggs unfit for food. This last item means the payment of hundreds of thousands of dollars in salaries for these men each year. Doesn't it look ridiculous on the face of it, to send bad eggs to market, and then pay salaries to men to cull them out for us?

It costs money to candle ranch eggs, so Mr. Dealer protects himself by giving a few cents less than market quotations, and the rancher grumbles about it, but these same ranchers do not make a concerted effort to improve their produce. It is easier to stay in the rut, take all the eggs gathered; good and bad; clean and dirty; little or big; cracked

## The Scandinavian American Bank

OF TACOMA, WASHINGTON

With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail

## Your own right arm

on the lever of a "K" Stump Puller easily rips out any stump that can be pulled by any horse power machine. Develops a 48 ton pull—all an inch-steel cable will hold.

**HAND POWER.**

### K Stump Puller

Works by leverage—easy as rowing a boat. One man alone can pull from 50 to 100 stumps per day. Works equally well on hillsides or marsh land. Made of Krupp steel—weighs only 171 lbs. Guaranteed against breakage.

Send for special offer and free book on Land Clearing.

Walter J. Fitzpatrick  
Box J 182 Fifth St.  
San Francisco, California



Write for illustrated circular, with prices, to the originator, F. C. Willson, Proprietor of Encinal Nurseries, Sunnyvale, Santa Clara County, Calif. The Best Way to Find Out.

what else counts? Nothing.

The producer, the dealer and the consumer each has a hand in keeping the egg wholesome. The producer may furnish clean feed, fresh water, have clean nests, gather the eggs twice a day, pack in perfectly clean cases, hold them in a cool clean storage room the few hours before he delivered them to the dealer twice a week, and all his work come to naught. If the case on the way into town is exposed direct to the rays of the summer sun, to the freezing temperature of a winter's storm; or gathers dampness from a general rain, so it will quickly mould as it stands in the store, those eggs are surely injured to the loss of both producer and dealer.

If the case has safely reached the dealer's hands, it may still lose its wholesomeness through carelessness. Left out on the sidewalk on a hot sunshiny day, or left standing too close to a heating stove in winter,

or checked, to town and pay the store man to sort them, and then blame the political party in power for low prices.

There are complaints on the side of the producer and complaints on the side of the consumer, but the dealer usually fights his own battles and says little.

### Standard Defined.

To arrive at an equitable standard as to commercial eggs, it is first necessary to visualize that standard. What makes a standard egg anyway—1st, wholesomeness; 2nd, fair average size, 24 to 28 oz. to the doz.; 3rd, freshness.

Why wholesomeness first? Consider how size, shape, shell, color, and all other points put together, are of small consequence, if the egg in question candles out unwholesome. If it is mouldy, or has been heated or has been frozen or is a spot or rot,



or too close to some damp wall in the storeroom, or too close to any strong odored goods, such as a kerosene barrel, and a very little time will spoil the best eggs ever delivered.

Lastly, when delivered into the home, the carton carelessly placed on a hot pantry shelf, or in a damp place, will quickly change the best eggs from select breakfast eggs to poor cooking eggs.

#### Size, and How to Maintain.

When the subject of weight of a dozen of eggs is up for discussion, arguments yards long can be strung out. Along the Coast, however, anything under 22 oz. to the dozen is "pullets" size, and sells about ten cents less per the dozen, and eggs weighing 24 to 28 oz. are "standard." Those very much over 28 oz. are more difficult to pack safely, and are likely to spoil those next them, by breaking and leaking out. Size is the most difficult point for the producer to control, unless he takes a determined stand against all layers of small eggs. He may guard against using layers of small eggs into his breeding pens, but further than that he can only grade his pack, carefully keeping undersized eggs out of the standard case. Where small eggs are mixed throughout the case, that case will probably be brought down to pullet price. If, however, the small eggs are packed by themselves, it gives a fair deal all around. The producer gets full price for large eggs and a fair price for the small one. No one can entirely avoid the production of a proportion of under-

sized eggs, but he can grade them when packing, instead of leaving that work to be done by the store man. If he is very much in earnest, he will have chicken pie made of hens habitually laying little eggs.

#### Freshness, Its Significance.

The third item is freshness. There is need of a steady supply of "strictly new laid eggs," 365 days of the year, and the producer who can guarantee a fairly steady supply the year round has the chance of getting the best possible markets. One of the most difficult conditions to meet, is this varying supply of eggs offered by ranchers in general. They invariably have skads of them in season of plenty, and next to none at all when they are difficult to obtain. This one fact makes it necessary for the merchant to depend on some reliable "day in and day out" source of supply, usually the much talked about commission man.

To help those just beginning to get into the egg market, the following explanation of market terms are added.

"Strictly New Laid," offered to the consumer within 72 hours after being laid. This is the highest grade known. Always in demand for breakfast eggs.

"Fresh eggs" mean those offered the consumer before they have in any way deteriorated, either aged, heated, frozen, gathered mould, or in any other way been injured in handling.

"Carefully handled" means that the eggs are not cracked, checked, or soiled by the packer in getting them from the nest to the case.

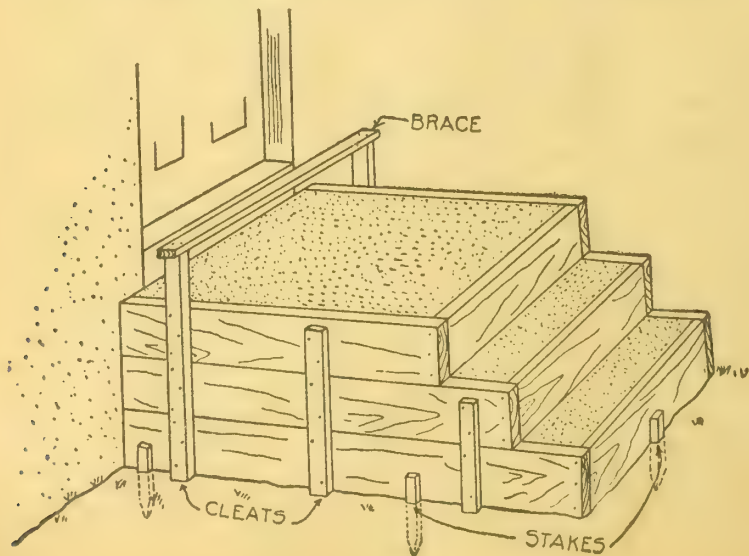
(Continued on page 22)

#### SIMPLE STEP CONSTRUCTION

Steps are not only subject to hard usage but when constructed of wood with the lower part in contact with the ground and subject to alternate wetting and drying, decay is very rapid, making them unsafe and dangerous. Steps at the rear or kitchen entrance of the house, encounter especially hard usage, but it is a very easy matter to have them durable and safe by constructing them of concrete, shown in the accompanying drawing. The three forms consist merely of that many boxes open at top and bottom and also at the end adjoining the doorsill.

A rise of eight inches and a tread of 10 inches will be found convenient. For this reason the height of each box should be eight inches, since every box will form a step. All of the boxes should be of the same width, but each one is 10 inches shorter than the one beneath it, thus forming the tread of the step. If the steps are few in number and not too

wide, 1-inch boards will be stiff enough to hold the concrete without bulging, but if there is any doubt about this it is better to use 2-inch plank. The concrete for the steps should be mixed in the proportion of one bag of Portland cement to two and one-half cubic feet of clean coarse sand to 4 cubic feet of crush rock or pebbles. The earth beneath the steps should be excavated to a depth of six inches below the surface, the excavation being the exact size of the bottom of the steps. Make sure that the earth is level and compact at the bottom of the excavation. Place the largest box in position around the edge of the excavation, staking it in place at two or three points to prevent shifting. Level the first box very carefully by means of a carpenter's spirit level. The concrete, mixed rather dry, should be deposited in the box and thoroughly tamped and compacted until moisture rises to the surface. Work or spade the concrete thoroughly along the



## Pure Bred A. R. O. Holsteins

### Pontiac and Dekol Breeding

A very large proportion of our cows have A. R. O. records and every one in milking condition is making a very satisfactory margin of profit.

Our entire herd is vigorous and developed for long time profitable dairy work.

From many years' experience we have found that dairying is profitable in proportion as cows of a fixed standard of production are bred and kept in the herd. For years our sires have been selected with that purpose in view.

The prices bidders at the sales have made when taking over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

**A. E. SMITH CO., Sumas, Wash.**  
(or White Building Seattle)

## Dairymen Planting Shade Trees

Leading dairymen, realizing their herds are most healthful and profitable when properly sheltered from inclement weather and kept in the open as much as possible, are now giving more attention to the planting of shade trees along the irrigating ditches, in the pasture and in the feed lots. Trees suitable for shade also serve the dual purpose of producing fuel when they become over-grown. The different varieties of maples, box elders, poplars, cottonwoods and locusts and walnuts are all represented in the shade tree plantings in the Pacific Northwest.

We are in a position to supply stock raisers with any kind of trees of suitable size to afford ample shade within a short course of time. Let us know the conditions surrounding your situation, your character of soil and purpose in view and we will submit a plan and list for your consideration.

#### FRUIT TREES AND ORNAMENTALS

For the family orchard, the commercial planter and to beautify the home yards we are equipped to supply orders complete and to give satisfaction. Our trees and plants are grown on tracts isolated by long distances from any infected orchard and are positively clean. Thrifty and well developed in every respect.

Our catalogue gives complete descriptions of all varieties of shade, fruit and ornamental stock. Write at once for a copy and feel free to ask any questions about the arrangement of ornamentals, the planting of fruit or shade trees. We are growers of choice stock and are mutually interested with planters for a high measure of success and satisfaction.

Please mention this paper.

**Washington Nursery Company**  
Toppenish, Wash.

## Lime Essential for Big Crops

Coast soils are deficient in lime. This element should be restored because it counteracts acidity, makes heavy clay soils more porous, renders sandy soils more adhesive, and applied in the proper form is the basic element in all ingredients of fertility. It serves to increase the clover, vetch, peas and other nitrogen fixing crops, thus adding to the value of the soil and the feed bin.

Ground Limestone is the safest and best form in which to apply, and our prices are very reasonable, within reach of all farmers, fruit growers and dairymen.

When writing for prices please state the proposed quantity wanted. Lime always on hand.

We supply any amount.

**SAVAGE-SCHOFIELD CO.**

1533 Dock St.

Tacoma, Wash.

sides of the forms so as to produce a smooth surface. At the front end of the box, where the concrete becomes the tread, the surface of the concrete is carefully leveled off and smoothed with a trowel for a distance of about 12 inches from the outer edge. Immediately after this is done the second and smaller box is placed on top of the first one, being fastened thereto by a few nails through the upright cleats shown in the drawing. The nails must not be so long as to project through the forms and into the concrete. Fill the second box with concrete immediately,



being careful that no dirt or other foreign matter falls or collects on the surface of the first batch of concrete, as this would prevent a good bond between the two layers. Finish this step or slab in exactly the same manner as described for the first step. The last or third step is constructed in exactly the same manner as those previously described.

The brace between the two back cleats is for the purpose of preventing the boards from spreading at the side next to the wall. The outer surface of the top step is carefully leveled off with a straight-edge and finished by troweling to a smooth surface. Excessive troweling, however, must be avoided. Not more than half hour should elapse between

placing the concrete for each step so that the concrete first deposited will not harden and set up before the next form is filled. After the steps are about one week old, the forms may be removed and the steps used. After the forms are removed any roughness or irregularities may be smoothed down and the surface of the entire steps finally finished by rubbing with an old piece of emery wheel and water or carborundum and water. Where the work includes many steps, a hollow space is generally left under the main body of the steps to effect a saving in materials. Where this is done the platform and steps are reinforced with steel rods or heavy wire mesh to prevent cracking.

## The Fertilizer Situation in the United States

American farmers are confronted by a serious situation in reference to fertilizer materials. As a result of the embargo placed by the German government on the exportation of potash, the supply of this substance has been entirely cut off. Under normal conditions sulphuric acid, which is required for making super-phosphates, is sold for \$5.00 or \$6.00 a ton. The increased demand for it since the breaking out of the European war has caused the price to rise to about \$25.00 a ton. It is impossible, therefore, for farmers to secure super-phosphates at prices which they have been accustomed to pay. The nitrogen supply is not materially less than usual.

The quantities of the various substances entering into the fertilizer trade and the prices paid by the farmers in 1913 were approximately as follows:

| Materials                     | Total retail value  |
|-------------------------------|---------------------|
| <b>Nitrogenous Materials—</b> |                     |
| Nitrate of soda .....         | \$ 3,500,000        |
| Ammonium sulphate ....        | 13,330,000          |
| Cotton seed meal .....        | 25,000,000          |
| Dried blood .....             | 1,600,000           |
| Tankage .....                 | 2,600,000           |
| Fish scrap .....              | 2,800,000           |
| <b>Total .....</b>            | <b>\$48,830,000</b> |
| <b>Phosphatic Material—</b>   |                     |
| Acid phosphate .....          | \$56,000,000        |
| <b>Potash Salts—</b>          |                     |
| Muriate of potash .....       | \$ 9,916,000        |
| Sulphate of potash .....      | 2,872,000           |
| Kainit .....                  | 5,601,000           |
| Manure salts .....            | 2,061,000           |
| <b>Total .....</b>            | <b>\$20,450,000</b> |

**Grand Total .....** \$125,280,000

### The Potash Situation.

There is practically no potash in this country at the present time for fertilizer use. The small quantities which were held over from former years are now priced at from eight to twelve times their normal value. The investigation of the Department and the Geological Survey have shown the possibility of producing from American sources an ample supply of potash salts for domestic consumption. These sources are: The giant kelp of the Pacific Coast from Lower California to Alaska; the alunite deposits, mainly in the mountains of Utah; the feldspathic rocks of the eastern part of the United States, and the mud of Searles Lake, in California.

### Giant Kelp Beds.

An ample supply of potash for the needs of farmers can be obtained from the giant kelp beds. These beds have been surveyed by the Bureau of Soils and a report, accompanied by maps showing in detail their extent and location, recently has been issued. Harvesting is accomplished easily, as the kelp grows in open water and barges fitted with mowing attachments can be used.

For utilizing the kelp several methods are feasible. It may be dried and ground. In this condition it contains all the salts originally present,

which are mainly potassium chlorid and sodium chlorid. This material has ideal mechanical properties for use in mixed fertilizers. When the pure potassium chlorid is desired it is necessary to separate the juice from the organic material and then to remove the sodium chlorid. The latter can be done readily by recrystallization; but the separation of the juice from the organic material is more difficult, for the reason that the kelp is nonfibrous and in attempts to effect separation by filtration the filters become clogged and unworkable. The problems yet to be worked out commercially are the best methods of drying the wet kelp and of effecting the ready and efficient separation of the plant juices from the organic material. Investigation of these questions has proceeded far enough to indicate that their solution should not be very difficult.

Three large concerns have begun operations for the manufacture of potash from kelp. While potash is indispensable in the preparation of fertilizers, it is also used for many other purposes, including the manufacture of matches, glass, liquid soap, and munitions. The prices offered under existing conditions by the manufacturers of such articles undoubtedly will cause practically the entire output of these concerns to be diverted from the fertilizer industry. It seems unlikely that normal conditions will be restored in the immediate future and that potash can be secured from foreign sources as heretofore in time for the next crop planting season. It also seems improbable that private enterprise will provide potash from domestic sources for agricultural purposes in time. It would require ninety or more plants, costing approximately \$50,000 and having an operating capital of about \$25,000 each, to produce the quantity needed for agriculture. This would involve the assumption that the commercial phases of the problem were satisfactorily solved. Even if the requisite funds were available, it is a question whether operations could begin in time to provide an adequate supply for the coming year. The Department is investigating all aspects of the question and is planning to send experts to California to study the situation and especially to consider possibilities of production on a commercial scale.

One fact has operated in a measure to embarrass private enterprise in this field. There is no legislation in any of the Pacific Coast States, along whose shores the kelp lies, providing for the leasing of the kelp beds. Without leases private investors would have no assurance that plants erected by them would have the necessary control over the kelp within their vicinity. The Department's officers will discuss this matter with the proper authorities in the Pacific Coast States and will urge the necessity of legislation regulating the use of the beds.

### The Phosphate Situation.

Acid phosphate is the basis of near-

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ly all commercial mixed fertilizers. It is made by the action of sulphuric acid upon phosphate rock. Our available sources of phosphate rock are greater than those of any other nation. The main supply for domestic consumption and for exportation comes from Tennessee, South Carolina, and Florida. The United States Government, however, owns vast deposits of phosphate rock in Utah, Wyoming, Montana, and neighboring states. These deposits have been withdrawn from private use pending legislation for their utilization and no supply has yet been developed from this source.

In 1914, 2,734,000 tons of phosphate rock were produced in this country. Up to that year about one-half the quantity mined was exported to Europe. The rock in its natural state is not readily absorbed as a plant food. It is made available for this purpose by treatment with sulphuric acid, about 1 ton of the acid being used to a ton of phosphate rock. When thus treated, a super-phosphate containing 14 to 18 per cent. of water-soluble phosphoric acid is made. The bulk of the sulphuric acid which enters into the manufacture of acid phosphate is made by fertilizer companies. Practically every fertilizer establishment (excepting the cottonseed meal factories) having an annual capacity of 15,000 tons or more operates also a sulphuric acid plant. The demand for the acid is so strong at present that every effort is being made to utilize old and abandoned establishments and to erect new plants. The latter operation is slow and costly, on account of the large amount of lead necessary for the construction of acid chambers. Difficulty also is being experienced in securing an adequate supply of pyrites, which is the principal source of sulphur.

The potential sources of sulphuric acid in the United States are ample to produce more than double the present annual output. Few of the lead, zinc, or copper smelting companies using sulphide ores have sulphuric acid plants in connection with their smelters. The fumes discharged into the atmosphere by these smelters are sufficient to produce many thousands of tons of sulphuric acid daily. Under normal conditions, the limited market for the acid and the long haul necessary to reach the market have made it commercially impracticable to convert the fumes into sulphuric acid. It is entirely feasible to erect sulphuric acid plants in connection with the copper, zinc, and lead smelters using sulphide ores. The concentrates of the ores may be roasted in furnaces independent of the smelting plants or the fumes may be delivered direct to the acid chambers.

#### Ammonium Phosphate

The Bureau of Soils is studying the problem of the fixation of atmospheric nitrogen with a view to develop a method for the production of ammonium phosphate and other forms of concentrated fertilizers. No ammonium phosphate is being made in this country at the present time. If cheap water power, phosphate rock, coal, and limestone can be found in accessible localities, the possibility of making this material on a commercial scale is considered entirely feasible. The greatest difficulty here is to discover cheap water power at points where phosphate rock, coal, and limestone are readily available. The Department is making every effort to locate available sources of developed water power which can be used in the manufacture of ammonium phosphate and other fertilizers.

It must not be understood that the suggestions which have been made, or the efforts which are now being put forth, will result in immediate relief for farmers. There are a number of technical problems which have to be solved if these fertilizers are to be produced on a commercial scale, and, even if the funds for the necessary plants were provided, either from private or public sources, considerable time necessarily would be required for the erection of the plants and for their full operation.

Save Available Fertilizer Elements.

In the unusual conditions existing

in the fertilizer trade, it is important that all fertilizing materials on the farm, especially those containing potash, should be conserved. The fertilizer ingredients already existing in the soil should be utilized and developed to the fullest extent. A great deal can be accomplished in this direction by deep plowing, constant cultivation, and thorough tillage. There should be a proper system of rotation. Especially where one crop has been grown for several years a different one should be planted this year. Green manures and cover crops should be used as much as possible in their proper rotation.

Of the organic substances, manure, both solid and liquid, is the most important and should be utilized wherever possible. All material of an organic nature, such as leaves and bedding of various sorts, should be composted and the compost applied to the soil. Special attention should be given also to the conservation of wood-ashes. Depending on the character of the wood, they contain potash in quantities varying ordinarily from three to ten per cent. All tree trimmings, brush cuttings, etc., should be burned and the ashes derived therefrom utilized.

The application of lime to many soils is of undoubted benefit. Though the availability of the fertilizing elements in the soil may not be greatly increased by its use, the resulting improvement in physical and bacterial conditions may increase considerably the productivity of the soil. (Particularly when lime is applied in connection with such leguminous crops as clover, alfalfa, vetch and peas, will the nitrogen content of the soil be increased.)

#### DRAIN COUNTRY ROADS.

Now during inclement weather is a good time to make note of the water holding places in the roads. Good drainage is the greatest essential to keep any road in order. Drain and keep ditches open first, then the surface rounded and smoothed towards the center. But most important of all is to keep the water from standing or accumulating on the road. See to it that the water is kept running off of roads.

#### MARKETING BUREAUS.

The National Association of Marketing officials which met recently in Chicago have adopted some resolutions to serve as foundation steps for further action on the part of producers, shippers, legislatures and for the attention of the general government.

The marketing problem will require careful study for years to come. The question of its correct solution is of paramount importance to the farmers, fruit growers and dairymen of the Pacific Northwest, who are long distances from the big market centers, and it is only through untiring, co-operative efforts that we may expect to attain satisfactory results.

The president, W. G. Scholtz, Boise, Idaho, invites suggestions from any reader who would seek to help forward this movement.

Bureaus Recommended for all States.

The resolutions adopted at the recent Chicago meeting includes: That the National Association of Marketing Officials strongly urges the states of the Union which have not yet created marketing bureaus, to do so at the earliest time possible in the interest of both their own producers and consumers.

That it is the sense of this association that with 48 state marketing bureaus brought into existence a machinery will have been created which will be a great reciprocal aid

## The Wheat Yield Tells the Story

**of Western Canada's Rapid Progress**

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc.

There is no war tax on land and no conscription. Write for illustrated pamphlet, reduced railroad rates and other information to

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The health of the livestock is dependent, to a great extent, according to leading authorities, on a sufficiency of lime content in the feed. Soils deficient in lime naturally produce feed which is insufficient in lime, and the tissues of animal life is therefore not sufficiently disease resistant.

Write for prices on estimated amount wanted and give name of your local freight station.

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in broadening the output for the farm productions of the various states.

In addition to the marketing bureau established by the department of agriculture at Washington, D. C., 13 states of the Union have likewise created state marketing bureaus.

#### Standardizing Selling Systems.

Recognizing that the practices common in many terminal markets have caused a great deal of dissatisfaction among producers, and a consequent shattering of confidence even in the worthy agencies of distribution:

The National Association of Marketing Officials places itself on record as favoring federal legislation for interstate shipments which will require commission merchants, and any other receivers of farm products on consignment, to keep a uniform system of accounts, giving each shipment a number in rotation, showing date and from whom received, date of sale, name of purchaser and price; a transcript of the entry sent promptly to shipper; all such records to be open at all times for examination by a shipper, or any state of federal market official.

The office of markets should publish the relation of production to probable demand for such products, both sectional, national and international.

#### Standardizing Farm Products.

As the universal negotiability of warehouse receipts is dependent upon a system of uniform grading and a properly bonded warehouse inspection.

1. We commend the work of the Office of Markets, United States department of agriculture, in its effort to establish uniform standards and grades for farm products.

2. We recommend to congress the passage of suitable legislation making permissive the establishment of a system of state graders acting under federal license and regulation, and of a system of warehouses which may be licensed and inspected by the federal Office of Markets in order to most effectively insure uniformity in grade and widest negotiability of the warehouse receipt.

3. That the state legislatures should pass such supplementary legislation as will insure the co-operation of all interests for obtaining uniform warehouse receipts and uniform grades, which statutes shall be sufficiently flexible to be in accord with all such federal action.

4. That all federal inspected warehouses shall be required to register the amount of each grade of each product received and delivered.

5. That in any given federally inspected warehouse no differences of rates be allowed for the same grade of any given farm product because of differences of amounts stored, or from other causes, and that no other form of discrimination shall be permitted.

#### LIMING FOR CROPS.

Ground lime-stone will be applied liberally by coast section farmers from now on because of its cheapness and its efficacy to increase the yield of the leguminous crops, including clovers, vetch, peas and alfalfa. It also helps to unlock the phosphoric acid in the soil, thus giving a chance for high color in fruits.

It also serves a very useful purpose in heavy clay or adobe soils, by making them more open, porous and

less likely to bake, and consequently renders them more easily tilled. On the other hand, lime cements together the coarse particles of sandy soil, and increases the capacity for holding water. And this action of lime for improving the texture of the soil is one of its most important functions.

A large supply of lime in a soil is necessary for the highest productivity," says Professor M. F. Miller, of the Missouri Agricultural College. "The form in which it should occur is that of lime carbonate, which has the function of keeping the soil sweet and of favoring the growth of beneficial bacteria. Soils which are inclined to be wet, those which are high lying and which have been subjected to excessive leaching, and those which have been farmed for a great number of years are usually deficient in this lime carbonate. Consequently, it is necessary on such soils to provide lime if the greatest returns are to be secured.

#### SUDAN GRASS.

Sudan grass belongs to the sorghum class of plants and there has been considerable experimenting with it in the coast section last year, with very flattering results.

D. R. Ruble states in the Homestead, that he planted seed in the Willamette Valley on June 1st, and it was ready to cut for hay August 15th. A second cutting was ready 55 days after the first crop was harvested, and yielded about 2½ tons per acre.

A seeding made on July 15 made a heavy crop which was fed to stock and devoured with a relish. It ripens slowly after attaining full height, and might serve also, a good purpose to mix with other crops for silage.

The seed is similar to flax seed and gives best results when drilled in. Mr. Ruble considers the Sudan the best of many new grasses which he has tried. According to his experience it grows and produces well, can be handled safely in this climate and is heartily eaten by both cattle and horses.

Mr. A. D. Thayer, who experimented with it at Waverly, Washington, last year, seeded about June 10 and had a good crop which stood 4½ feet high that was cut and out of the way in time to seed fall wheat. Mr. Thayer is also growing peas and sweet clover made into ensilage and fed in connection with Sudan hay.

#### WHEAT CONDITIONS.

The fall seeding of wheat in the U. S. was 11.3 per cent less in 1915 than in 1914, and the condition is a trifle less favorable. The average price in 1915 was about 3½ cents lower than in 1914. What the average price will be in 1916 is difficult to guess, but wheat and other grains as well, are likely to be paying crops. The essential point to insure a good measure of profit is to make conditions right for large yields of the acreage under cultivation.

#### PROFILE SURVEYS OF WENATCHEE RIVER, WASHINGTON.

Wenatchee River, Washington, with its tributaries, drains a stretch of the eastern slope of the Cascade Mountains about 40 miles long and the territory north of the Yakima River drainage basin, from which it is separated by the Wenatchee Mountains.

## HOPE FARM SEEDS

**WHITE SPRING VETCH**—Pure creamy white (new), good as split peas for the table; 100 per cent better than common vetch for stock. Try it and get a start. 10c per pkg., 6 pkgs. for 50c.

**HILL SELECTED POTATOES**—Varieties, Factor, Up-to-date, smooth high quality, heavy yielders, very best two. State quantity wanted and write for prices.

**FIELD CORN**—Acclimated to the Coast section. Strong vitality, kept dry sure to grow. Varieties, Yellow Dent and Rutherford, both good. State quantity wanted when writing for prices.

As the demand is likely to be strong later in the season, to insure your order being filled, please make reservation as early as possible.

Kindly mention this paper when writing.

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## Ground Limestone

Apply Ground Limestone on the soil in preference to the burnt, air-slaked or hydrated form, because the Ground Limestone does not destroy the nitrogenous fertility contained in the soil.

Ground Limestone unlocks the silicates of the soil, liberating potash without any injurious results. It is necessary for soils in the Coast Section, which are deficient in lime, to apply it in order to get both large yields and the best quality of feed for live stock, particularly in growing any of the legumes, like clover, peas, vetch, etc.

Freight rates for delivery in car or ton lots have been arranged. Those preparing to buy will please give name of their local station, the amount of lime required, when writing to ascertain cost delivered.

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Two thousand Franquette and Mayette trees in different sizes. Stock and strain of highest quality.

Table Grapes, strong vines, olives, almonds and other stock. Write for list and prices.

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That are tested by the famous O. A. C. germination and purity test. All seeds double sacked to prevent loss by leakage. We can furnish for prompt shipment, Red and Alsike Clover and Winter Vetch. Also Winter Rye, Barley, Wheat, Oats, and all kinds of grass seeds. Lowest market price f. o. b.

**Corvallis Flouring Mills**

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ORNAMENTAL and SHADE

TREES and FLOWERING

SHRUBS.

Thus you can enhance the value of your place by a little attention to nut growing and ornamental planting. This may be brought about at a surprisingly small cost in proportion to the actual value afforded. Here are some of the select varieties—

#### IN WALNUTS:

Franquette, Mayette, Chaberte, Cordiformis and Sieboldi.

#### IN ORNAMENTALS:

Hydrangeas, Lilacs, Snowballs, Syringas, Deutzias, Mountain Ash, Spireas, Labernums, the great variety of roses and small evergreens.

We have as fine an assortment of the staple deciduous shade trees, shrubs, vines, roses, etc., as can be found in any nursery in the West. A line will bring catalog and information. Our salesmen cover almost every field.

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Good stock. Prompt service.

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The Walnut Book is a new, neatly printed publication in booklet form, published at Orenco, Oregon, at \$1 per year. It is devoted to the promotion of the walnut industry, both cultivation and marketing. We will send it to any new or old subscriber, together with one year's subscription credit for the Northwest Horticulturist and Dairyman on receipt of \$1. Address Box 1604, Tacoma, Wash.



The upper part of the drainage area is heavily forested, but the extreme lower part consists of timberless hills and ridges, in most places covered with sagebrush. The water of the river is used for irrigation and the development of power; a hydroelectric plant at Leavenworth, operated by the Great Northern Railway Co., has developed 7,000 horsepower, which is used to operate trains through the Cascade tunnel.

Because of the interest in the development of water power the United States Geological Survey is making profile surveys on power streams and publishing the results, and Water-Supply Paper 368, just issued by the Survey in cooperation with the State of Washington, deals with the Wenatchee River basin. A copy may be obtained free on application to the Director of the geological Survey, Washington, D. C.

### SUNFLOWERS.

#### An Important Agricultural Crop.

Frequent inquiries are received at the Experiment Station at Pullman concerning the growing of sunflowers. Dr. Cardiff, Director of the Experiment Station, gives the following information on this plant as an agricultural crop:

The sunflower is an important agricultural crop, tho it has not been used to any great extent in this country. It is cultivated quite extensively in Russia and used for a variety of purposes. It makes excellent silage, especially when mixed with corn and some legume in about equal parts of each. The seed has an unusually high oil and protein content. On account of the latter its growth rapidly exhausts the nitrogen from the soil and, therefore, if grown successively on land, the soil will require considerable fertilizer. The oil portion does not exhaust the soil since the elements from which oil is made come from the air and water.

The seed is used in the production of oil, which is extracted by compression, and is of value for table use, cooking purposes, and in general the same use as is made of olive oil.

In Russia the seeds of the larger seeded varieties are sold as peanuts are in this country, and eaten raw. The plant has also been used quite extensively in paper manufacture in some of the European countries.

The sunflower should be grown upon soil which is suitable for corn and planted and cultivated about the same as corn, though it will stand a little earlier planting than the latter on account of its greater resistance to frost. It is a crop well worthy of further attention in some portions of this state.

### AGRICULTURE, STEVENS COUNTY, WASHINGTON.

The results of the soil survey of Stevens County, Washington, recently completed by the Bureau of Soils and the Washington Soil Survey is now published as a report by the United States Department of Agriculture. This report covers a soil survey of the county and is accompanied by two maps, one showing the distribution of the various soils, and the other classifying broadly the lands of the county with reference to their value for farming. The report covers 137 pages, and discusses in more or less detail the topography, soils, agri-

culture, climate, and chemical characteristics of the soil.

Only about one-fifth of the area reported in farms in 1910 is improved, and taking the county as a whole, agriculture may be considered to be in its early stages. The chief products are live stock, small grain, hay, including timothy, clover and alfalfa, dairy products, fruit, and truck.

Cattle are not handled in large number, but rather in herds of moderate or small size. Dairying has not reached near the importance the conditions would seem to warrant. Commercial orcharding, mainly apples, has made most of its growth during the last 10 years, and many if not most of the orchards are not yet in bearing. Trucking is carried on in a small way to supply the local markets. Both irrigation and dry farming are practiced and there is apparently ample opportunity for the profitable extension of the various interests mentioned.

### RURAL CREDITS AND TITLES.

"The farmer, like every other business man, should reduce the interest rate paid on his borrowed capital to the lowest possible point," says Dean F. B. Mumford of the Missouri College of Agriculture. Numerous plans for accomplishing this by state and private aid have been advanced, but many of them are omitting the Torrens and similar systems of land title registration which will reduce the expense of obtaining land mortgage loans. After all possible help has been secured by other means, there will still be the possibility of obtaining further relief by this system if it has not been adopted.

Either the system mentioned by Dean Mumford, or some similar system, is in use in Germany, Austria, and France; so they can be said to agree on this point, whether on others or not. Under these systems, the expense of abstract of title and of the inspection of titles by lawyers when land is sold, or a loan is secured by a mortgage, are avoided. Only the recorder's fee is paid and there would be no occasion for securing an abstract of title, having the lawyer inspect the title, or having a title guarantee company insure your title.

### KINDNESS TO ANIMALS.

With scarcely an exception live stock farmers who are successful are imbued with a disposition of kindly feeling and generous sympathetic dealing with the animals in their possession. That trait is an essential for success in live stock raising and unless the reader realizes that fact he may as well stay out of the live stock line for he is likely to do better at some other vocation.

A well known dairyman who is making some measure of success, is careful about affording shelter, providing feed in the form of rations carefully figured, but his manner towards the animals is more like that of a mechanic towards a set of tools. Another well known dairyman makes ample provision for shelter and feed and in addition there is a sympathetic feeling of kindness which causes him to anticipate and act promptly when exceptions to any well defined rules become a leading factor in the problem, and these with live stock are very many and generally seriously important.

For instance sudden changes of

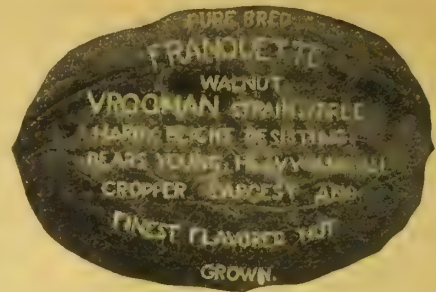
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weather may requires a little attention to keep the cows from getting too hot or too cold, and a needed change in the feed is in like manner anticipated by the sympathetic dairyman.

The success of the latter live stock farmer is measured in much larger volumes of operation and profit than that of the farmer, while integrity and good business judgment apply in both cases.

A leading speed horse owner lost one of his valuable animals in a fire some years ago in Tacoma, and immediately following the accident sobbed like a child, not because of the money loss, for he had considerable wealth, but he grieved and bemoaned for the "suffering that this pet animal must have endured." This was evidence of the kindly feeling and sympathy for animals that made him successful in his line.

Writing about the importance of "Feeding Kindness," I. D. O'Donnell says in Reclamation Record:

"You may figure out the best mixture of grain and forage and provide the best of shelter for your stock, but unless you mix a goodly proportion of kindness you are not going to get maximum returns. If you don't like live stock, don't try to raise live stock; you will be miserable and so will the animals. If you have to beat the cow with the milk stool before you can settle down to milking, there is no use of your weighing the milk and applying the Babcock test to see whether the cow is profitable—she can't be profitable and it is not the cow's fault, either.

If your hogs are so distrustful of you that you have to get some one else to call them, you won't make money raising hogs. If your horse trembles and shrinks when you come near, it is a sure sign the horse has been in bad company.

One of the biggest of the condensed milk companies advertises that it sells milk produced by 'contented cows.' I like to trade with people who keep contented cows. It pays to keep live stock contented. Size up your neighborhood and you will see that the man whose live stock is willing to stay at home is making money out of that live stock, while the man whose stock will go through any kind of a fence to get away from home condemns live stock because it doesn't pay.

"Be kind to the pigs, colts, calves, and lambs, and you will have live stock easy to handle and economical to keep. On some farms there is no such thing as "breaking" horses. The colts are handled from birth and they never dispute the authority of the owner. Feed a little kindness; you will enjoy it as much as the live stock. Kindness with stock has the same effect as 'taffy' and blarney with men—it will get the desired results where 'roughness' would start a riot, and leave the owner minus.

#### BLOAT RELIEVED WITH FORMALIN.

Mr. R. H. Williams, animal husbandman, University of Arizona Agricultural Experiment Station, states that recently it has been found that formalin is an efficient remedy for animals suffering from bloat. This should be given as soon as possible after the animals are noticed to be in pain and the left side greatly distended. \* Ruminants, such as sheep

and cattle, are most frequently affected. Cows should be drenched with 1 quart of water, to which has been added 40 cubic centimeters of formalin—this is one-quarter of a cup, or about three tablespoons. One-fourth of this amount is sufficient for sheep. Relief usually comes inside of 20 minutes, and there are no bad effects following, such as the results from the use of the trocar and canula, or "sticking" with a knife.

#### WHITEWASH, A PAINT SUBSTITUTE.

A whitewash that is almost as serviceable and cheaper than the cheapest paint for wood, brick, or stone has been used by the United States government for whitewashing light-houses. It has also been used to embellish the east end of the White House in Washington. The whitewash is made as follows:

"Slake half a bushel of lime with boiling water, cover during the process to keep in steam, strain the liquid thru a fine sieve or strainer, and add to it a peck of salt, previously dissolved in warm water, three pounds of ground rise boiled to a thin paste and stirred in while hot, half a pound of Spanish whiting, and one pound of clear glue, previously dissolved by soaking in cold water and then hanging over a slow fire in a small pot hung in a larger one filled with water. Add five gallons of hot water to the mixture, stir well, and let it stand a few days, covered from dirt. It should be applied hot, for which purpose it can be kept in a kettle or portable furnace."

By the addition of coloring matter, states Prof. Geo. Olson of the State Experiment Station at Pullman, Wash., various shades of color can be obtained. The coloring matters generally used are ochre, chrome, Dutch pink, raw sienna for yellows and buff; Venetian red, burnt sienna, Indian red or purple brown for reds; celestial blue, ultramarine, indigo for blues; red and blue for purple, gray or lavender; red lead and chrome for orange; Brunswick green for greens.

Yellow ochre added to the whitewash gives a cream color; lampblack or ivory black produces a pearl or lead tint; four pounds of umber to one pound of Indian red and one pound of lampblack, makes fawn; and four pounds of umber and two pounds of lampblack produces the common stone color.

#### CONCRETE ON FARMS.

Two Farmers' Bulletins, "The Use of Concrete on the Farm" and "Concrete Construction on the Live Stock Farm," published by U. S. Department of Agriculture, had a sale of between 12,000 and 14,000 copies or nearly one-half as many as the Department distributed gratuitously. In this connection the report states that it is evident that there is an increased willingness on the part of the public to purchase publications when they can no longer be secured upon application to the Department. If some more convenient means, it is said, could be adopted, the sale of these publications would be greatly increased. It is evident farmers generally are interested in cement and concrete material for construction purposes, and that a large amount of concrete will be used on the farms in the near future.

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## HULLESS OATS, EXPERIMENT.

Hulless oats have the peculiar characteristic of shelling out free from the hull when threshed. They have never been extensively grown in the Northwest and their value is not generally known. In determining their worth it should be understood that their feeding value is somewhat grater than ordinary oats, as the ordinary varieties may have as much as 30 per cent hull. However, to furnish an amount of food substance per acre equivalent to other varieties they should produce a yield of 70 per cent. by weight of the varieties commonly grown.

The Washington Experiment Station obtained a small quantity of hulless oats from the United States Department of Agriculture in 1914. These and other hulless varieties have been tested with the ordinary ones, which have hulls on, for the past several years. The average yield for a two years' test in the grain nursery shows that Chinese hulless oats, one of the most common varieties, produced 43 per cent of the yield of Swedish Select Oats. An improved hulless oat, which was produced at the Washington Experiment Station by crossing the Chinese hulless on the Palouse Wonder oat, produced 72 per cent. of the yield produced by Swedish Select during the same two years.

The best hulless oats under field conditions produced only 53 per cent of the yield of Swedish Select. Besides producing a low yield, most of the hulless varieties have a tendency to shatter badly, and are often susceptible to smut, thus further reducing the yield of the harvested crop. Attempts are being made to improve these hulless varieties by crossing them on some of the better yielding varieties. Until hulless oats are further improved they would hardly seem to be worthy of attention from the grower, except where they

are to be used for a special purpose. —Division of Farm Crops.

## CLEAN WHEAT.

The Department of Agriculture, Washington, D. C., cautions wheat farmers to guard against infection from corn cockle in wheat, also to keep wheat free from mixtures of rye or vetch. Clean wheat only can command the highest market price. Therefore it is important to be particular about the wheat used for seed. The fanning mill is coming into more general use among the wheat farmers of the Pacific Northwest.

Corn cockle seed is particularly objectionable in wheat because it contains a poisonous element known as saponin or sapotoxin. This has been found at times to do considerable injury to young chickens and stock when fed on wheat screenings.

Of the other impurities examined, kinghead, sometimes known as great ragweed, is frequently found in wheat in quantities as high as 3 or 4 per cent. Under such circumstances the flour contains black specks and the color and texture of the bread are seriously affected. Even as small an amount as 1 per cent of kinghead seed is noticeable in flour. Vetch seed also alters the color of the flour, giving it a yellowish appearance as well as a noticeable odor of vetch.

As has already been stated, the presence of any of these impurities is very likely to reduce the price the farmer receives for his wheat. Not only is the price per bushel usually less but there may also be a "dockage" charge. Dockage is a trade term for the amount deducted on account of the presence of foreign material from the gross weight of the wheat. For example, if a load of 50 bushels of wheat is found to contain 2 pounds of foreign matter per bushel, 100 pounds is deducted from the lot for "dockage."

## IRRIGATION

Adequate, available moisture during growing seasons.

### IRRIGATION PROJECTS IN WASHINGTON.

According to the census of 1910, there are within the State of Washington some 330,000 acres of irrigated land, the annual crop returns from which amount to \$16,550,000. The total value of this land before irrigation was probably less than \$1,000,000; its present value, at a most conservative estimate, is \$66,000,000. There are still within the state from 2,000,000 to 2,500,000 acres of irrigable, arid lands, equal in every respect to the lands heretofore placed under irrigation.

The Jones Bill, proposes that the United States government should guarantee the securities of irrigation districts, after they have been carefully studied and O. K'd by proper Department officers. By many the Jones Bill is looked upon as the most feasible plan for the extension of irrigation work that has yet been proposed. Incidentally it may be stated that this plan was the outgrowth of a discussion at the last session of the Washington Irrigation Institute.

### MOISTURE FOR DIFFERENT CROPS.

The soil can be adapted to the crop to some extent and the crop to the soil to a certain degree. Big yields without reducing the fertility of the soil is always the aim of the successful farmer providing his market is satisfactory.

Available moisture during the growing season is of paramount importance.

The following table is the result of work carried on at the Washington State College by Professor C. C. Thom, Head of the Department of Soils, and shows the pounds of water required to produce one pound of dry matter for the following crops:

|                |     |               |     |
|----------------|-----|---------------|-----|
| Potatoes ....  | 167 | Tomatoes .... | 350 |
| Onions .....   | 235 | Oats .....    | 352 |
| Sorghum .....  | 240 | Beans .....   | 365 |
| orn .....      | 250 | Wheat Hay ..  | 380 |
| Sugar Beets .. | 260 | Cabbage ..... | 397 |
| Millet .....   | 278 | Peas .....    | 420 |
| Carrots .....  | 312 | Wheat .....   | 430 |
| Barley .....   | 320 | Alfalfa ..... | 440 |
| Pea-Oat Hay .. | 330 | Red Clover .. | 448 |

The water requirement of crops as shown in this table explains largely why different crops are adapted to different soil types. It will be noticed that the crops requiring the least

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Many farmers are now planting increasingly of ornamental trees and flowering shrubs thus making their homes more beautiful and valuable. Their selections include Hardy Hydrangeas, one of the most attractive fall flowering shrubs, Dogwood, some varieties of which bloom both spring and fall, Japanese Quince, the earliest to flower in spring; Lilacs, Snowballs, Spirea and the various climbing plants to cover old buildings or unsightly objects about the homestead.

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We have seed for sale in quantities from 1-lb. to car lots. It is the 1915 crop—the best to be had at any price, anywhere. We have no bargains to offer you, but if you are interested to the extent that you want good seed at honest prices, we are on the job to the finish. For prices, samples, etc., wire or write,

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amount of water to produce a pound of dry matter are generally adapted to the sandy soils and the crops requiring the greatest amount of water to produce a pound of dry matter are generally adapted to the soils composed largely of silt and clay. Having in mind that the sandy soils hold less water than the clay soils, it would seem that if the sandy soils had a continuous supply of moisture they should produce crops adapted to the heavier soils. This is indeed the case where our light valley soils are sub-irrigated and stands out as an exception to the general rule. The crops generally considered particularly well adapted to the heavier soils are grown with good success on these light soils where, on account of sub-irrigation, there is a continuous supply of moisture. An exception in the opposite direction, however, is to be found on our upland soils. The moisture condition here undoubtedly largely influences these soils that dry out badly to the extent that they are adapted to crops usually considered to be adapted to lighter soils. Much of the rather heavy upland soil is underlaid with hardpan at varying depths. It is almost impossible for water to travel either up or down through this, so the water for crops must be held largely in the soil above this hardpan. Crops adapted to the heavier soils are not so well adapted to this type of soil because of the shortage of moisture. As these soils warm up rather slowly they are not well adapted to the early truck crops, so the logical thing is to grow largely fall-seeded crops.

The question which now naturally arises is to what extent it is possible to change a soil or the system of cropping to extend the range of crops that can be profitably grown on any particular soil. Under ordinary conditions and by the ordinary means it will not be possible to greatly extend the number of crops adapted to soil, but conditions for those crops adapted to it can be improved.

Perhaps the most effective way to improve the soil condition is to put it into condition to take in and retain the greatest amount of capillary water. In some instances drainage will be the first step; with some soils the addition of humus is necessary; with other soils deeper plowing or subsoil plowing must be practiced; and with most soils more thorough and more frequent cultivation must be given. On some soils all of these may be necessary, and on others the best plan will be to use fall-seeded crops or crops seeded very early in the spring so they will make the most of their growth before the season of sufficient rainfall is past.

#### PIPES FOR UNDERGROUND SYSTEMS.

Discussing the relative merits of different kinds of pipes for irrigators to use underground based on durability, efficiency and economy. A. B. Fasseen in an address at the Irrigation Institute, North Yakima, said in part:

"There are four kinds of pipe used in the construction of underground system, namely, wood stave pipe, steel pipe, concrete pipe, and vitrified clay pipe.

Wood stave pipe has undoubtedly given the best satisfaction during its life, but its life is uncertain, depend-

ing upon the condition of the soil. In real dry soil it has been known to rot out in four to five years, while in constantly wet soil it has been in good condition after thirty years' service.

Steel pipe is the most abused pipe in service today. Some giving excellent service, while others are complete failures. There are a few don'ts to be observed in purchasing steel pipe, namely:

Don't use a lighter gauge than number 20.

Don't use a number two grade of metal.

Don't use California Asphaltum dipped pipe, use mineral rubber.

Don't buy a guarantee, buy the material, that's what you need.

If you will observe the don'ts and then go to a reliable concern you will aid both yourself and merchant in getting the best for your money, if it is steel you want.

Concrete pipe if made properly I have no hesitancy in saying would under certain conditions, where no alkali existed, prove a very serviceable conduit, but when it is so manufactured it costs more than the other makes of pipe. There are more monuments of failure in concrete pipe than any other kind of pipe, due largely to ignorance. If you want to use cement pipe get a set of specifications from the United States Reclamation Service and require the manufacturer to live up to them. Or if you wish to manufacture the concrete pipe yourself you can purchase moulds at a reasonable price and then follow the specifications to the letter.

Vitrified clay pipe has been known to last for centuries for drainage and sewer purposes, but not until the last few years has it been used for irrigation conduits. Three years ago there was but one vitrified clay system in operation in the Yakima Valley, while today there are innumerable such systems. The system above mentioned has been in service now fourteen years and is working perfectly under a thirty-five foot head. The foremost irrigationists are using this pipe exclusively, and the United States Reclamation Service has purchased twenty carloads of second sewers for the Snipes Mountain project.

Vitrified clay pipe is self evident the best pipe to use for an underground irrigation system. It is easy to lay; it is easy to tap; it is inexpensive and it will last forever.

In selecting your pipe make certain of your soil condition and the head of water you have to take care of, then go to reliable concerns and buy the best you can get for your money for your particular proposition. It will be cheapest in the end.

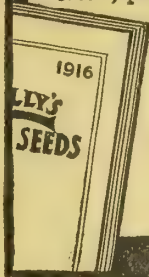
Quick delivery is now recognized as the most economical factor both in the use and also the handling of water. Therefore it is necessary to have a large head at the point of delivery. This may be accomplished in two ways, either by pressure or by increasing the size of the pipe and the delivery openings. It is always advisable to reduce the pressure and increase the size of pipe wherever possible.

In conclusion I will say that economy rides upon the shoulders of durability over the road of efficiency, and if you destroy durability, economy falls with it.

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What a satisfaction it is to know that after you have taken every soil precaution, that similar precaution has been exercised by the seedsman of whom you buy your seed. What matter if the land be plowed, the seed sown, if that seed is not good seed. LILLY'S TESTED NORTHERN GROWN SEEDS are good seeds—by which we mean good, clean, pure, strong seed, capable of germinating and producing a maximum crop of superior quality. Send for 1916 Seed Annual, Free.

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What of the past with its buried joys,  
And its measureless hopes and fears?  
Must we visit the graves of the hopes  
gone by,  
Or reach for the onward years?  
Shall the blood-red banners of dying  
day  
Mar the daffodil hues of morn?  
May the right not fight for its peer-  
less place  
In the time that shall yet be born?

Out on the seas of a western realm  
Shall our fleets resistless ride;  
For theirs is the sphere of the com-  
ing race,  
And the roll of its flood-borne tide;  
If an old world groan in the throes  
of pain,  
Mid the wrongs that for years have  
been,  
Still the new world speaks in its tone  
of might  
By the voice of Nineteen Sixteen.

—G. W. BOYNTON.

"Happiness is a very beautiful thing—the most beautiful and heavenly thing in the world—but it is a result—a spiritual condition, and is not predetermined by a bank account nor by the flattering incense of praise. It comes from doing your work as well as you can and helping to brace up somebody else."

### INFLUENCE OF CHRISTIANITY GREATEST POWER.

If there is any intelligence left to dominate the minds of men the outcome of the awful European contest will be for the Christian men and women of the world, irrespective of creed, to throw their combined influence in favor of firmness and patience and moderation and to readjust national policies till they will no longer tolerate the rule or sentiment of militarism which dominates industry and penalizes free action. The time has come to abolish bureaucratic rule or autocratic power from end to end of the earth. "No free-man shall be taken or imprisoned or outlawed or exiled or in any way harmed." "All men are created equal"; they are endowed by their Creator with certain inalienable rights; among these are "life, liberty

and the pursuit of happiness." Let the Christ law rule, "On earth peace and good will to men." The greatest restraining police power in the civilized world is the influence of the Christian Church.

—BENJAMIN HAMMOND.

### AMERICAN BABY YEAR.

1916 is Baby Year. The facts about American babies, the needs of American babies, and America's responsibility to her babies will this year be known as never before, because the first week in March will be Baby Week throughout the country.

More than 400 communities representing every state in the Union are already laying their plans for Baby Week, according to the Children's Bureau of the U. S. Department of Labor, in order that during those seven days the needs of the babies may be so presented that all the parents in those communities will learn a little better how to care for their babies, and all the citizens will realize that they have a special obligation to safeguard the conditions surrounding babies. And it is confidently believed by those who are interested in this nation-wide Baby Week that the remainder of the year will be marked by a strengthening of all community activities for saving babies' lives and giving them a better chance to grow to a healthy maturity.

### Rural Children—Three-Fifths of All.

"Three-fifths of the 30,000,000 children in the United States are rural children. What are the facts as to rural child welfare? They are not known. But it is noteworthy that the percentage of illiteracy in rural communities, according to the 1910 census, is double that in cities. Where the rural child labor is great, the percentage of child illiteracy is high. The juvenile delinquency laws on the statute books of most of our States are ineffective over the greater part of those States because rural probation officers are lacking; and the figures of correctional institutions show that the country is largely represented.

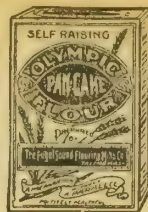
"Time and money are required to secure facts about the physical, social, and economic conditions surrounding rural children, but these conditions must be understood if we are to be sure that we are making progress in securing a fair chance for every child."

### Physical Dangers Unmeasured.

"As a general rule compulsory school attendance ceases at the age of 14, the crucial point of maturing life, which educator and physiologist well know to be the most critical period of growth. Yesterday great authorities were experimenting on the best methods of training their minds, of developing their bodily powers. To-day the same children are beyond the reach of all this costly solicitude—they have gone to work."

### Standards Needed for Children's Legislation.

"Various States have secured commissions to review and codify the laws relating to children. The needs of unfortunate children have first engaged the attention of philanthropic



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persons. But in preparing a complete code for the children of any State, the rights of all children must be considered. The study of legislation affecting children in the various States and Territories which the law requires the Children's Bureau to make should afford an increasing body of information at the service of those engaged in codifying the children's laws of any State."

### STANDARDIZED DRESS FOR WOMEN

Attempts to improve and standardize women's dress should avoid such foolish extremes as the adoption of men's costumes on the one hand and the purely decorative on the other. Both lead to a disregard of important considerations of usefulness, hygiene, and modesty, according to Miss Ethel Ronzone, of the Missouri College of Agriculture, Department of Home Economics. Miss

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Ronzone deplors the fact that fashion decrees that women shall buy expensive garments, ill-adapted to their work and hygienic needs, only to find it necessary to replace them by others no better, before they are worn out. Altho not entirely free from disadvantages or changing styles, men who buy with reasonable judgment are much less likely to find their clothing so out of style that they hardly dare wear it simply because

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fashion has changed. They are usually able to use their garments until wear makes new ones necessary.

Standardization of dress means the adoption of clothing to all the needs of women on all occasions, yet the design, color, and texture offer a wide range of choice to suit the individual taste. The dress must be practical and hygienic and economical.

Standardized dress presents two problems: (1) the determination of the design best adapted to use in making the garments that will meet the common-sense needs of women and (2) the introduction of such garments into general and permanent use. Miss Ronzone's plan includes the ultimate standardization of the entire wardrobe, including underwear, shoes, hats, gloves, and coats, but only the dress has yet been designed. It is hygienic and comfortable, permitting full freedom of motion at work or at play, and is without trimming or excessive material.

The skirt is made in four pieces with a seam at the back and opens in the front. This allows for ample width,  $2\frac{1}{2}$  to 3 yards depending on the size of the person. It is very simple to make because only one seam needs staying, and in order that it be made perfectly hygienic and comfortable when worn without a corset, it is suspended from the shoulders by means of an underwaist made of some thin material. The waist is a blouse falling down over the hips and held in slightly at the waist by a loose belt. The fullness can either be fixed into a belt, the lower part being in the form of a peplum, or it may be held in loosely as in a Norfolk blouse.

#### HOUSEHOLD RECIPES

**Orange Marmalade**—1 doz. oranges, 3 lemons. Slice thin; add 3 pints water to each pint chips. Soak 24 hours, then boil till tender. Let stand over night, then add  $1\frac{1}{2}$  pints sugar to every pint mixture. Boil till it jells.

**Raisin Cake** — Cover  $1\frac{1}{2}$  cups with boiling water and let simmer 20 minutes. Cream  $\frac{3}{4}$  cup sugar with  $\frac{1}{4}$  cup butter,  $1\frac{1}{2}$  cups flour,  $\frac{3}{4}$  cups nut meats,  $\frac{1}{2}$  cup water off raisins. 1 egg beaten light, 1 teaspoon soda in flour, 1 teaspoon nutmeg, 1 teaspoon cinnamon.

#### PLANTING ROSES.

O. M. Pudor, Puyallup, Wash.

"He who would have beautiful roses in his garden must have beautiful roses in his heart. He must love them well and always. He must have not only the growing admiration, the enthusiasm and the passion, but the tenderness, the thoughtfulness, the reverence, the watchfulness of love." —Dean Hole.

If you would have success with roses—that noble queen of all flowers—you must be willing to do a little hard work in the preparation of the ground and be willing to give your rose bushes watchful care during the growing season, and you will be surely rewarded with the most splendid blossoms that nature produces.

#### How to Prepare the Bed.

Evacuate your beds, or that particular spot where you intend to plant a rose, to a depth of fully two feet; be liberal and make the hole wide; cart the dirt away; don't leave it beside the hole, or you will be tempted

to use the same soil over. In the bottom of this two-foot hole put one foot of well decomposed rich manure—cow, sheep or poultry manures are all excellent; if such are not available, chopped pieces of sod are excellent. If your soil is wet and sticky and does not drain well, put some gravel or stones in the bottom. Then fill up the hole with new rich soil, being careful not to let any manure come into contact with the roots of your plant, whatever that plant may be. If you will use a sprinkling of lime and bone meal right now, and some sand, all well mixed up with the soil, it will be an excellent thing and give your plant a big start.

As soon as your plants arrive, and everything is ready, unpack them and spread out, and rearrange the roots, especially the little fine ones; if any of them are broken or bruised cut them off with a sharp knife, making the cut slanting from the inside downwards. If the packing has become dry during the journey, it is an excellent thing to soak the roots in water for a few hours. Don't expose the roots to the sun and air any longer than necessary.

#### How to Plant.

Now spade a hole in your previously prepared bed—make it plenty wide—then set the plant into that hole, set it just as deep as it stood in the nursery row, a little deeper would be better—spread out the roots carefully and sift the soil through your fingers back into the hole and around the roots and the plant. Pour a little water on, which will help to settle the soil around the plant; by and by you will go back and fill up the depression caused by the sinking in of the water with dry soil, firming it well down with your hands, or with your feet in case of a larger plant. Don't do any planting while the soil is wet and sticky and packs; heel your plants in and wait a few days.

If your roses arrive untrimmed, prune them first before planting, and prune hard, except the tea roses. Cut off all long branches two-thirds of their growth; cut out all dead or broken wood, and remove all branches that have a tendency to grow inside of the plant; remember, you must give your roses plenty of air and sunshine to keep them healthy, and a lot of branches growing inside of a bush excludes the air and sun, and mildew results.

Upon approach of cold weather, that is, after the ground freezes, put a forkful of straw manure around the plants, reaching well up into the lower branches; this will be sufficient protection for any of the hybrid perpetuals and hybrid teas—even enough for the more tender tea roses in the Pacific Northwest. Upon approach of Spring remove this covering from around the plants, forking it in—use no spade, for you will cut a lot of fine roots. At this time I also apply some manure around the plants, using poultry droppings or a handful of ground bone sprinkled around the plants, leaving it on top of the ground, letting the Spring rains do the work of washing it into the soil.

If you are so unfortunate as to be living in a very cold Winter climate where the thermometer goes to zero and below, your hybrid teas and teas need, of course, a complete covering of straw, or some other such material, or wrapping each branch to the tip in straw or excelsior.

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## GARMENT PATTERNS

Order by number. See description below.



**1546—Ladies' Dress**—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires  $6\frac{1}{4}$  yards of 44-inch material for a 36-inch size. The skirt measures  $3\frac{1}{2}$  yards at the lower edge. Price 10 cents.

**1535—Ladies' Over All Apron**—Cut in 3 sizes: Small, Medium and Large. It requires  $6\frac{1}{4}$  yards of 36-inch material for a Medium size. Price 10 cents.

**1557—Girls' Dress**—Cut in 4 sizes: 4, 6, 8 and 10 years. It requires  $4\frac{1}{4}$  yards of 36-inch material for the dress with double skirt, and  $3\frac{1}{2}$  yards with single skirt for an 8-year size. Price 10 cents.

**1551—Girls' Dress**—Cut in 5 sizes: 4, 6, 8, 10 and 12 years. It requires  $3\frac{1}{2}$  yards of 44-inch material for a 6-year size. Price 10 cents.

**1550—Coat for Misses and Small Women, with Convertible Collar**—Cut in 3 sizes: 16, 18 and 20 years. It requires  $3\frac{1}{2}$  yards of 54-inch material for a 16-year size. Price 10 cents.

**1547—Ladies' House Dress**—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires  $5\frac{1}{4}$  yards of 44-inch material for a 36-inch size. The skirt measures about  $3\frac{1}{2}$  yards at the lower edge. Price 10 cents.

**1558—Skirt for Misses and Small Women, with or without Hem Cuff**—Cut in 4 sizes: 14, 16, 18 and 20 years. A 16-year size will require  $3\frac{1}{2}$  yards of 36-inch material for the skirt and  $1\frac{1}{4}$  yard for the cuff. Price 10 cents.

**1556—Middy Blouse for Misses and Small Women**—Cut in 4 sizes: 14, 16, 18 and 20 years. It requires  $2\frac{1}{2}$  yards of 44-inch material for a 16-year size. Price 10 cents.

About 10 day's time required.

**NORTHWEST HORTICULTURIST & DAIRYMAN**  
Box 1604, Tacoma, Wash.



## Soil and Climate.

There is a difference of opinion as to the best soil for roses; some say that clay is the best soil for them, at least for hybrid perpetuals; hybrid teas and teas do better in a lighter soil. My soil is a so-called "sandy loam," and I doubt that I could find a better soil for rose growing. When yearling roses produce big healthy canes four to six feet long, and a wealth of blossoms before their second year, nobody can convince me that clay is the ideal soil for roses. Of course, our climate on the Pacific Coast has lots to do with the marvelous success of rose growing in Washington and Oregon; it is very similar to that of Ireland, where our finest roses have had their birthplace. I believe the time is not far off when the year-round, out-of-doors-grown roses of Puget Sound will become as famous for their beauty, hardiness and vigor as the Irish roses have

been in the past. For example, I can take an Eastern-grown rose, make a propagation from it, and in less than a year I will have a stronger and bigger plant than the original parent plant; it's all in the soil and the climate—grown out-of-doors the year-round in an ideal rose climate, that is the secret.

But whether you live in the West, the favored climate of the Pacific, or in the Middle West, in the East, or in Canada, you can all raise roses galore, for there are roses now for every climate; whether your soil is sandy or clay, or whether your thermometer goes to 20 below zero; with a little care and attention everybody can have roses now, and their first cost is very small nowadays. But remember, no rose bush will stand neglect, or weeds as next door neighbors; just remember the words of Dean Hole as quoted at the beginning of this article, and success is yours.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

High Record Cows Form Careful  
Breeding and Feeding

## CAREFUL BREEDING AND FEEDING AT MONTESANO.

The following is the report of R. W. McKenna, official tester for the Montesano Cow Testing Association, for the month ending December 16, 1915:

| Owner, Name of Cow and Breed.                                | Age<br>Years | When<br>Fresh | Lbs.<br>Milk | %<br>Fat | But-<br>terfat |
|--------------------------------------------------------------|--------------|---------------|--------------|----------|----------------|
| Murphy Bros., No. 12, Grade Jersey ....                      | 8            | Nov. 1        | 1550         | 5.1      | 79.1           |
| Murphy Bros., No. 6, Grade Jersey ....                       | 5            | Nov. 15       | 1001         | 5.9      | 59.1           |
| Murphy Bros., No. 4, Grade Jersey ....                       | 8            | Nov. 10       | 1132         | 5.0      | 56.6           |
| Murphy Bros., No. 9, Grade Jersey ....                       | 7            | Nov. 1        | 1212         | 4.6      | 55.8           |
| E. L. Brewer, Owl's Gol. Queen, Jersey..                     | 5            | Apr. 16       | 837          | 6.3      | 52.9           |
| Murphy Bros., No. 15, Grade Jersey ....                      | 4            | Oct. 1        | 1017         | 5.1      | 51.9           |
| Oscar Smith, No. 16, Grade Jersey .....                      | 5            | Oct. 8        | 1048         | 4.6      | 48.2           |
| Murphy Bros., No. 20, Grade Jersey ....                      | 5            | Sept. 15      | 955          | 5.0      | 47.8           |
| J. H. Taylor, M.M.D. Girlletta, Jersey ....                  | 7            | Nov. 13       | 955          | 5.0      | 47.8           |
| Parker Askew, Pogis L. Alpha, Jersey ..                      | 7            | Nov. 12       | 1085         | 4.4      | 47.7           |
| W. J. Wharton, Sally, Grade Holstein ...                     | 5            | Nov. 12       | 1193         | 4.0      | 47.7           |
| Murphy Bros., No. 11, Grade Jersey ....                      | 7            | Apr. 15       | 849          | 5.6      | 47.5           |
| D. C. Simons, Pogis de Kol, Grade Jersey                     | 3            | Oct. 29       | 970          | 4.9      | 47.5           |
| Murphy Bros., No. 25, Grade Jersey ....                      | 8            | May 15        | 874          | 5.4      | 47.2           |
| Murphy Bros., No. 21, Grade Jersey ....                      | 5            | Nov. 15       | 998          | 4.7      | 46.9           |
| A. H. Arland, Old Spot, Grade Shorthorn                      | 7            | Nov. 16       | 1141         | 4.0      | 45.6           |
| W. J. Wharton, Maggie, Grade Ayreshire.                      | 3            | Nov. 2        | 949          | 4.6      | 43.6           |
| Oscar Smith, No. 3, Grade Jersey .....                       | 8            | Oct. 8        | 1073         | 3.9      | 41.8           |
| E. L. Brewer, Olympia's Golden Lassie,<br>Grade Jersey ..... | 4            | Oct. 20       | 877          | 4.7      | 41.2           |
| Murphy Bros., No. 14, Grade Jersey ....                      | 4            | Oct. 1        | 834          | 4.9      | 40.9           |
| A. M. Ventine, Baldy, Grade Shorthorn.                       | 4            | Oct. 20       | 1197         | 3.4      | 40.7           |

This report is remarkable in that it shows the four highest cows in the list to be from one herd. Furthermore ten cows in the list are from this same herd. True they all came fresh recently, but that alone could not account for the remarkable showing of this grade Jersey herd. In the writer's opinion this excellent showing is the result of three factors: Good breeding and good feeding, coupled with selection for production practiced over a large number of years.

In this herd pure-bred Jersey sires have been used for the past twenty years, and the heifers from the highest producing cows have been retained in the herd. They have not in that time used a grade sire simply because he might have been cheaper than a pure-bred, which is but another way of saying that there has been a gradual increase in the production of the herd, each lot of heifers slightly excelling their mothers. As an example of the method of feeding practiced by the Murphy Brothers, the following is given as the daily ration of No. 12, the cow that stood at the head of the list for the past month: Hay, 7 lbs.; silage, 31 lbs.; roots, 41 lbs.; molasses, 1 lb.; barley, 8½ lbs.; oil meal, 1½ lbs. These figures were taken before the cow had been put on full feed. At present she is receiving a heavier ration of grain and roots than indicated by these figures.

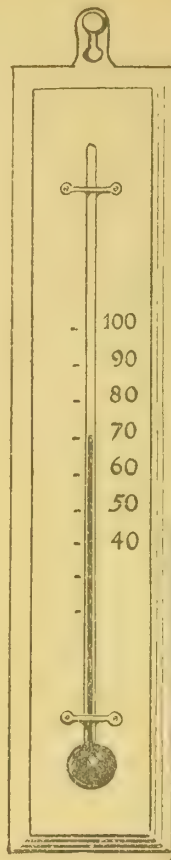
After all the profitable cow is the one that produces at a good profit for ten or eleven months of the year. Succeeding reports will serve to show the relative persistence of these cows that were the leaders for the first month.

C. F. MONROE.

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where  
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Are constantly figuring to keep down the cost of the feed bills on a well-balanced milk ration in order to

#### MAKE THE LARGEST PROFIT MARGIN.

In the Coast section, clovers, vetches, peas and other leguminous crops rich in protein are grown abundantly, and dairymen require more of the carbonaceous concentrates to make up the economical and substantial ration; for that purpose barley and corn are better suited than any other grains when not too costly.

As by-products of our factory, barley and corn are put up in a wholesome feed mixture showing the following analysis:

#### BARLEY-CORN MIXTURE

|                                   |        |
|-----------------------------------|--------|
| Moisture .....                    | 5.64%  |
| Crude fat .....                   | 6.38%  |
| Crude Protein .....               | 14.71% |
| Crude Fiber .....                 | 18.25% |
| Maltose .....                     | .82%   |
| Starch .....                      | 36.79% |
| Nitrogen, Free extract, etc. .... | 14.74% |
| Ash .....                         | 2.67%  |

Total ..... 100.00%

The crude fat, fiber and starch composing over 60 per cent. makes this concentrate a valuable addition to any home-grown feeds rich in protein. Being a by-product we can make attractive prices.

Write for sample, price on quantity, and full particulars.

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**HIGHEST RECORD  
GUERNSEYS.****Show Increase in Fat Production.**

A compilation and comparison of the highest fifty records made in the Guernsey breed of cattle for the years of Nov. 1913 to Nov. 1914 and Nov. 1914 to Nov. 1915 brings out some interesting facts.

In the 1913-1914 list there appears one cow with a record of over 1000 lbs. butter fat. This cow was May Rilma 22761, who produced 19673 lbs milk and 107.41 lbs. butter fat. Seven appear in the 800 lb. list, 16 in the 700 and 26 in the 600 list. The average of the entire 50 records is 715.7 lbs. fat.

In the year 1914-1915 there appeared also a cow with over 1000 lbs. of fat, Murne Cowan 19597, having produced 24008 lbs. milk and 1098.18 lbs. fat. Two cows appear in the 900 lb. list, 7 in the 800, 22 in the 700, and only 18 in the 600. The average of the 50 records for that year is 742 lbs. fat.

Five cows which appeared last year appear again this year. These are: Julie of the Chene 30460, Beauty Eagle 18117, Imp. Rosie V. of the Bourg de Bas 36380, Imp. France XVIII's Daughter 25001 and Golden Lassie of Paxtang 24696.

Several of the cows in last year's list have daughters who have also entered the list of the 50 highest records.

The average fat production for the entire breed has raised 8 lbs. during this time and the above figures would indicate that at least a portion of this increase was due to the development of a large number of 700 lb. cows and better during the year—the number in this class increasing from 16 to 22.

—A. G. C. C.

**FEED STANDARDS.**

By A. B. Nystrom, Dairy Husbandman, State College, Pullman, Washington.

Various authorities have worked out definite feeding standards for cows and the one most used by the feeders in this country is that of Professor Haecker of Minnesota. His Standard for a thousand-pound cow giving 25 pounds of 4 per cent milk daily is as follows:

|                       | Pro.  | Car-  |      |
|-----------------------|-------|-------|------|
|                       | tein. | bohy. | Fat. |
| For maintenance ...   | .70   | 7.00  | .10  |
| For 25 lbs. milk .... | 1.18  | 5.75  | .45  |

Total nutrient ... 1.88 12.75 .55

When the ration is such as to supply the different elements in the above proportions and at the same time providing for from 25 to 30 pounds of dry matter, it is said to be balanced and by calculation it will be found that the nutritive ratio is between 1 to 5 and 1 to 7.

**The Nutritive Ratio.**

From the investigations of the amounts of protein and carbohydrates required by cows, made at various experiment stations, we learn that on the average a cow can economically use from 5 to 7½ pounds of digestible carbohydrates to each pound of protein. This ratio of protein to non-protein nutrients in a ration is what is known as the nutritive ratio and is often designated as "NR." To make this term more comprehensive it may be well to figure the nutritive

ratio of one of our common feeds, wheat bran.

The table of digestible nutrients tells us that 100 pounds of bran contain 12 pounds of digestible protein, 42 pounds of digestible carbohydrates, and 2.5 pounds of digestible fats. The first step in the calculation is to reduce the fat to terms of carbohydrates. This is done by multiplying the 2.5 pounds of fat by 2¼ because each pound of fat contains as much energy as 2¼ pounds of carbohydrates. This gives 5.625 pounds which now may be considered carbohydrates. This, added to the 42 pounds of digestible carbohydrates given in the table, makes a total of 47.625. We have 12 pounds of digestible protein to 47.625 pounds of digestible carbohydrates and by dividing 47.625 by 12 we find we have 3.96 pounds of carbohydrates to every pound of protein. Therefore, the N. R. of wheat bran is 1 to 3.96, usually written 1:3.96 or approximately 1:4.

In speaking of the nutritive ratios of different feeds they are frequently referred to as being very wide, wide, medium, or narrow. The exact ratio for each of these groups is fixed arbitrarily, but usually a feed with a nutritive ratio of 1:12 and up is considered very wide; that from 1:8 to 1:11.9 wide; that from 1:5 to 1:7.9 medium, and that less than 1:5 narrow.

**HOLLYWOOD HOLSTEIN  
HERD.**

At the Cascade International Show, Mr. F. S. Stimson, proprietor of Hollywood Farm, topped the sale by paying \$950 for Jacoba Choicest Mercedes 2nd, the first 30-lb. cow in the Yakima Valley. She was consigned by W. M. Nelson & Son, North Yakima, who paid \$550 for her a couple of years ago.

Mr. Stimson has built up an exceptionally high record herd of Holsteins in a comparatively short number of years, and according to the pace set it will be but a short time until anything below a 30-lb. cow would be a curiosity at Hollywood.

In giving some of the records made at this farm to the Homestead, his herd manager, Mr. Peters, states:

"Every cow now in the Hollywood herd has made an official record that put her in the Advanced Register, and there is no herd in the United States that can show as many high record animals as this herd. Six cows have made official tests over 30 lbs. butter in seven days, fourteen cows have produced over 100 lbs. butter in 30 days; twenty-five cows have given over 100 lbs. milk in one day; eight cows, including two 2-year-olds and two 4-year-olds, have made an average of 23, 112.1 lbs. milk and 934.8 lbs. butter in one year. The herd is kept in good working condition all the time and during the last year, up to August 1, the average production of 127 milk cows has never dropped below five gallons of milk per head per day. All the milk is sold in Seattle as certified milk, the herd is under the close observation of the health department of that city, and all animals over 6 months old are tested for tuberculosis twice annually, and no reactors have been found during the last 3½ years.

The highest seven and thirty-day records west of New York state, and also the fifth highest record in the

**GLENDALE CREAMERY CO.**

We offer some choice pure bred Jersey bull calves out of Pride Merry Pogis, whose sires dam is Adelaide of Beechlands with record of 999½ lbs. butter in one year. His dam is Pride of Beechlands, whose 2 year old record is 505 lbs. butter in one year. These bulls are in fine condition, should increase the producing capacity of their owner's future herd. Further particulars and prices on application.

GLENDALE CREAMERY CO.,

D. S. Troy, Manager.

Chimacum, Wash.

**ALBERS Feeds Them All**

**THE COW**—Albers Molasses Feed, a combination of Cane Molasses, Soya Bean meal, Ground Barley and Ground Oat Feed, will increase the milk flow, make more cream, and keep your cows in a good healthy condition.

**THE HOG**—Albers Berkshire Hog Feed, a combination of Cane Molasses, Soya Bean Meal, Ground Corn, Ground Kaffir Corn and Ground Barley, will cut down your feed bill, and give you all around satisfaction, because it has a feeding value equal to Corn.

**THE HORSE**—Albers Percheron Horse Feed, a combination of Cane Molasses, Soya Bean Meal, Rolled Oats, Rolled Barley, Cracked Corn and Alfalfa Meal, will increase the capacity for work, reduce digestive ailments, and keep the animals in better flesh.

The pure Cane Molasses in the above feeds makes them very palatable and digestible.

**Albers Bros. Milling Co.**

SEATTLE  
TACOMA

LOS ANGELES

PORTLAND  
SAN FRANCISCO



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

**SKYKOMISH VALLEY HERD  
HOLSTEIN CATTLE**

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

**JUANITA STOCK FARM HOLSTEINS**

Home of Margie Newman, the world's record cow, No. 76312, and several world record 2 year old cows. We offer for sale valuable youngsters.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,**  
CHIMACUM,  
WASH.

Kindly mention this paper

**Moxee Valley Holstein Farm****A NICE BUNCH OF YOUNG HOLSTEINS FOR SALE**

Cows on official test are showing a high butter fat record.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

**TYSON & McKELHEER**

Moxee City, Wash.



United States is held by a cow owned by the Hollywood Farm, Pietertje Floa Artis, who produced in seven days 38.141 lbs. butter and in thirty days, 140.025 lbs. butter. Her daughter, Hollywood Floa Fayne Artis, is doing splendid now on her yearly test, and her junior 2-year-old record for seven days is 22.59 lbs. butter, and for thirty days 90.4 lbs. butter.

#### Particular About Sires.

The breeding of the heifers and bulls raised on this farm is by far better than the breeding of these high-record cows, which are their dams. They will be sired by bulls of the quality of Hollywood Lilith Palmyra, which will insure the high producing ability of the heifers, and experience has shown the management of the farm that young registered bulls of Hollywood quality, with high records on their dams and sires side, are in growing demand by the progressive dairy farmers of the Northwest, and young sires from this herd have also been sold in Texas and California. A letter recently received from J. J. Rupp of Tillamook, Oregon, carried the welcome information to the farm that his bull, Hollywood Springbrook Artis, purchased of Mr. Stimson at the Portland sale last fall, had carried off the second prize at the Tillamook fair. The sire of this bull has a 29.4 lb. dam, and he is the largest bull in the United States for his age, and a splendid individual; he weighed at the age of 2 years and 8 months 2700, and is as active and fast as a yearling. The dam of Mr. Rupp's bull, Artis Hengerveld De Kol 3d Girl, has an official record of 26.905 lbs. butter from 517.5 lbs. milk, at 3 years of age, with an average test of 4.1 per cent fat, and is now doing splendid on the yearly test.

"More pleasant news came from the Southwestern Washington Fair, where F. M. Svinth, of Chehalis, showed his 2-year-old bull, Hollywood Rocella Palmyra, and won first prize in his class; the sire of this bull has 28 daughters in the Hollywood herd and 11 of them have made A.R.O. records, two over 22.45 lbs. of butter as junior 2-year-olds, the other 17 daughters of King Palmyra Fayne will be tested during the next six months, and look like splendid prospects for high production. The dam of Mr. Svinth's young bull, Rocelia Hengerveld, at 3 years of age made 25.19 lbs. of butter from 470.3 lbs. milk in seven days, her average test being 4.3 per cent butter fat, and is also doing splendid in a year's test this season. In the first seventy days of her test she had an average of nearly 80 lbs. of milk per day and is sure to make over 750 lbs. of fat this year. It is plain that these official records of the dams and grand-dams of the young bulls purchased by a breeder are of considerable value to him, especially if he is breeding registered stock. They are a great help in disposing of the surplus stock at a higher price than if no official records were back of their sires.

#### VALUE OF PURE BRED SIRES.

The average farmer does not realize the value of good sires. He does not discriminate as to quality and that is one reason for not attaining to the point of good profit margins.

The best investments leading dairy-

men of the Pacific Northwest have made during past years when getting their start, were in the purchase of good sires, some of them at a long price, but with scarcely an exception these men find their purchases were not too expensive.

It is gratifying to notice that the number of dairy farmers who are giving more attention to the value of sires backed by good records are increasing.

At the recent Pacific International sale, Portland, Mr. B. O. Case, of Vancouver, Wash., paid \$400 for a yearling Holstein bull, consigned by Chas. Eldridge, of Chimacum. It paid Mr. Eldridge well to raise this animal and no doubt but Mr. Case will make several times that sum by developing a very profitable dairy herd.

Quite a number of bull calves by other consigners in this sale, were sold at about \$125 each, a good sum of money, many dairy farmers would say, for young calves.

But it is only by looking ahead and acting promptly when opportunity affords that dairymen improve their financial condition. Too many spend their time and energy with cows which do but little better than pay for their board.

Remember the value of the future dairy herd depends on the use of a sire backed with satisfactory records.

#### WESTERN WASHINGTON HOLSTEIN BREEDER'S THIRD SALE.

At an enthusiastic meeting of the Western Washington Holstein Breeder's Association, held at Everett recently, it was decided to hold the next Semi-Annual sale of the Association, on the Snohomish County Fair Grounds on March 15th, 1916.

The general improvement in business conditions of the West, creates a feeling of confidence among us breeders, and they have decided to make this sale the banner sale of the Association, consequently 80 head "Of the best in the West" have been promised by the leading breeders of the Puget Sound country, so the public have a right to expect animals of exceptional quality to be catalogued for the third semi-annual sale of the Association.

The same committee serving formerly, will manage this sale, and A. B. Winter, 1515 Hewitt Ave., Everett, Wash., remains Secretary and Treasurer, to whom communications may be made for full particulars.

#### HIGH HOLSTEIN RECORDS IN THE PUGET SOUND HERD.

At the present we have 20 head of cows and heifers in the yearly test and the first two to finish their records have made more butter and milk in their classes than any heifers on the coast, all breeds included. Other 2-year-old heifers will finish their yearly work with records from 550 lbs. to 750 lbs. butter in one year. A few cows in test from 6 to 9 months will finish their years work making over 1000 lbs. butter. One cow, Lutscke Vale Cornucopia, after having twin bull calves, has produced in the yearly test, in 7 months 20,378.4 lbs. milk and 625 lbs. butter. Her twin bulls are strictly show animals. They stood 1st and 2nd places at the Cascade International show



## Puget Sound Herd Holsteins

Herd sires "Sir Chimacum Wayne" and "King Korndyke Molly." Their dams are both in the yearly test and making large records. Sir Chimacum Wayne is the only bull in the world whose dam and sire's dam averaged 122.8 lbs. milk in one day and 3,245.5 lbs. in thirty days; and he has a 2-year-old sister that produced 21,572.1 lbs. milk in one year and another sister that holds the world's record as a two-year-old of 105 lbs. milk in one day and 2733.3 lbs. in 30 days. King Korndyke Molly's dam is one of the highest record 3-year-old daughters of Sir Vee-man Hengerveld. His sire "King Korndyke Sadie Vale's" first six daughters have records that average higher than any bull in the world. He is also the only bull in the world with a 41-lb. dam, a 40-lb. sister on his sire's side and a 38-lb. sister on his dam's side.

Young stock for sale.

Wm. Bishop, Prop.,

Chimacum, Wash.

## DAIRYMEN and POULTRYMEN

We can supply your wants, complete with articles of any description which can be carried by Parcel Post to full barn and milk house equipment. Positive satisfaction assured on all goods we handle and we ship very promptly. We are filling orders for poultry supplies.

Send your name and address to be placed on mailing list for our new catalogue.

Gasoline Engines for every farm purpose.

## Poole's Seed and Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

## Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concordia, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.



in a class of 25 and was in the four that won 1st prize for the get of sire in the same show, and all other fairs they were prize winners. They also have the world's milk record behind them for the average of the 3 nearest dams.

Wm. BISHOP,

By John Van Trojen, Jr.

### SKYKOMISH VALLEY HERD HOLSTEINS.

**Good Blood a Demonstrated Success; Valuable Young Cattle for Next Sale.**

In a recent letter to the Horticulturist and Dairyman, Mr. Herman Steffen, Monroe, Washington, states that the young cows in his herd of registered Holsteins are continuing to make higher milk and butter records with each additional test period. Two young cows have just finished with 20.7 and 20.4 lbs. butter in 7 days. Another at 3 years of age, a daughter of King Ormsby, made 18.113 lbs. butter in 7 days and is now making a higher showing during another test. There are several young cows in the herd whose dams produced over 21 pounds butter and whose sire is backed with records still larger.

Mr. Steffen is conducting his dairy farm according to the plan of knowing exactly what each cow in the herd is worth, based on her capacity for production. He is a member of the Western Washington Holstein Breeders' Association, and will con-

sign 14 head of these high record cattle for the sale to take place at Snohomish, in March, and the capacity of every animal offered will be established by practical work on his farm.

Included in the lot to be consigned are some very valuable young bulls, sons of his herd bull Sir Snow Fayne which has two full sisters, one with a record of 24.825 lbs. butter in 7 days at 4 years, and the other 19.86 lbs. in 7 days at 2 years and 15 days of age.

One of the young bulls is a son of a 22.2 lb. butter dam at 3 years, another of a 21.9 lb. dam at 2 years, and the other a 16.8 lb. dam at 3 years old.

It would be somewhat difficult to figure the real worth of bulls of this type, for a future dairy herd but it is safe to say that the value of each young cow in the next generation, from a sire of this class would be worth from \$15 to \$25 more than her dam, in any one of more than three-fourths of the working dairy herds in the Northwest at the present time. Aside from careful attention to housing the production of feed and the feeding, bankers who are liberally extending credit to dairymen favor those who invest in good sires.

Mr. Steffen's demonstration of success in his own case is proof of the worth of good sires. Money spent for purchase of them has paid him extremely well.

## Dairy Conditions and How to Improve Them

At the recent meeting of the Washington State Dairy Association, Mr. D. McInnes brought out the startling fact that the consumption of dairy products per capita in the Puget Sound cities is decreasing. Statistics were given to show there is no over production, but an indication of under consumption. The consumption of butter per capita per day is only half an ounce, and as the use of butter is greater in the country, people living in the cities are therefore using considerably less than half an ounce per day. In the city of Seattle the daily consumption of milk per capita is only one-half gills, and cream one-tenth gill per day. As compared with prices of other foods, more dairy products ought to be consumed and there must be some underlying cause for such extremely meager consumption, said Mr. McInnes.

#### Organization the Remedy.

Continuing his address, Mr. McInnes stated in part:

Personally I can see but one solution, and that is organization. For this I believe will, if carefully worked out, embrace all factors for improvement and in time will result in permanent benefits to our industry.

If we look around we find all lines of business, save one, from the banker to the bootblack organized. The one business left unorganized is the farmer's, and as a consequence he and his business is open to attack by anyone that from selfish motives may find it to their personal advantage to attack him. Knowing full well that they can do so with impunity. His business is also open to exploitation by any other business to whose interest it may be to exploit him.

Can we longer afford to remain the only business unorganized?

In my judgment need of organization for both business and protection is of so much importance as to stand prominently as the most vital question of all, easily over-shadowing all other phases of our industry.

The old third reader story of the lark that had built its nest and hatched its brood in the meadow of the farmer may be used in connection with this as an apt illustration.

The farmer saw that his field was ready to cut and sent word to the neighbors for help. The lark was not concerned about moving until the farmer said he would sharpen the sickle and do the cutting himself.

And so when we dairymen make up our minds to do our own business and protect that business from attack and exploitation, things will begin to move our way and not before.

#### Specific Co-operation.

If such is the case the question arises which is the best way to move. It might be well to give attention to the advice of the federal government and try and work it out on co-operative lines.

In every dairy section of the state where there are enough cows to justify there could be established a co-operative creamery organized first, for the purpose of improving the grade of cream to the end that such a superior grade of butter could be made as to bring the top market price, and by reason of its superiority hold our local markets against all outside competition and prepare the way so that when we become an exporting state of creating a demand for our surplus butter on account of its superior quality. The quality

## DAIRY LAND

Sixty acres choice dairy land, in tracts to suit, on 20 years' time; all cleared, leveled and tilled. In contest, on small tract, have dug at rate of 40 tons potatoes per acre. 1915 crop of peas brought me over \$140 per acre. On Pacific Highway, 2 miles to condensary or creamery. Can easily establish retail milk route in Bellingham. Address

W. H. KAUFMAN, R. F. D. No. 2, Bellingham, Wash.

## ALBERS CALF MEAL

THE PERFECT MILK SUBSTITUTE

The basis of which is Ground Oatmeal, with the proper amount of other grains, meals, etc., to give the greatest amount of satisfaction. We aim to manufacture a Calf Meal that will give satisfaction—one that will produce results. One hundred lbs. of ALBERS CALF MEAL is equal in feeding value to one hundred gallons of whole milk.



ALBERS CALF MEAL is absolutely harmless, and is guaranteed by us to produce the best of results.

**Albers Bros. Milling Co.**

Seattle  
Tacoma  
Portland

San Francisco  
Los Angeles  
Oakland

## JERSEY HEIFERS FOR SALE

Have a few registered Jersey heifers and heifer calves as well as young Register of Merit cows to offer at prices far below their value. All high class, prize winning, producing stock.

SILVER BIRCH FARM

Route 1, Box 3

NEWPORT, WASH.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

## PLANT PEAR, WALNUT and ORNAMENTAL TREES



**QUALITY FIRST**  
**Quaker Nursery Trees are always "Best"**  
C. F. Lansing, Prop. Salem, Ore.

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

**QUAKER NURSERIES**

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## HOTEL EATON

West Park and Morrison Streets  
**PORTLAND, OREGON**

Located in the heart of the  
THEATER AND SHOPPING DISTRICT  
A Strictly First-Class House. \$1.00 per Day and Up  
Our auto bus meets all trains

**J. B. STEINBACH, Manager**



six hundred of such creameries in the state of Minnesota. The quality of their butter is unsurpassed, bringing a premium wherever sold.

Second. To enable its patrons to cheapen production by installing grinders and utilizing the surplus power of the creamery in grinding grain raised by him for winter feed at cost, thus in a large measure doing away with the necessity of sending money out for the purchase of high-priced mill feeds. And also by co-operative buying of mill feeds that could not be economically produced on the farm.

Third. And by an annual meeting of delegates from all of the co-operative creameries of the state arrive at some method of assessment that would produce a fund large enough for publicity purposes and to finance a central selling agency that could handle the products of all of the co-operative creameries of the state.

By contributing half a cent per pound on each pound of butter fat a fund large enough could be raised to finance a selling agency sufficiently strong to have the confidence of the producer.

A large fund also would be available for advertising the superior quality of butter produced by co-operative methods, which would undoubtedly bring results.

Near all the large cities milk companies could be formed on much the same basis, through its own wagons. Here again the dairymen could afford to contribute to a publicity fund to push his goods the same as any other line of business. I see no reason why an association of this kind should not be successful under careful and judicious management. And further, to co-operate with all other manufacturers and dealers in dairy products for a thorough advertising campaign to bring dairy products of all kinds before the general public for the purpose of inducing larger consumption.

In connection with this co-operative movement a state-wide dairymen's protective organization should be perfected with a regular monthly due similar to labor organizations. The objects of this association should be to unite all dairymen for the purpose of mutual aid and assistance in improving the business of dairying, and in securing legislation to advance and protect that interest, to supervise proposed legislation affecting the dairy industry, and to oppose in the name of the association all legislation on the subject that it shall deem ill advised or harmful, and propose for enactment such legislation as it shall deem advantageous and necessary.

#### VALUABLE HOLSTEIN SIRE BOUGHT

Leading Dairymen at Elma Selects From Puget Sound Herd.

Mr. Geo. Simpson, of Elma, Wash., has added to his valuable pure bred herd the reserve Junior Champion Holstein bull, Sir Chimacum Wayne Pontiac, which he has recently bought from Wm. Bishop, Chimacum, Wash. Mr. Simpson is very careful about the choice of his herd sire as to conformation and records by which he is backed.

This young bull is sired by Sir Chimacum Wayne, whose records of his dam and sires dam average 33.24

lbs. butter in 7 days, 134.22 lbs. in 30 days. 122.89 lbs. milk in 1 day. 859.2 lbs. milk in 7 days and 3249.55 lbs. in 30 days. He is also a brother on his dam's side to Chimacum Wayne Boon 2d, one of the greatest 2-year-old heifers in the world. She produced in 365 days 21,572.2 lbs. milk and 882.2 lbs. butter. On his sires side he is a brother to the world's record 2-year-old heifer "Aaggie Nena Cornucopia," which produced 105 lbs. milk in 1 day; 2733.7 lbs. in 30 days and 24.04 lbs. butter in 7 days and almost 95 lbs. in 30 days.

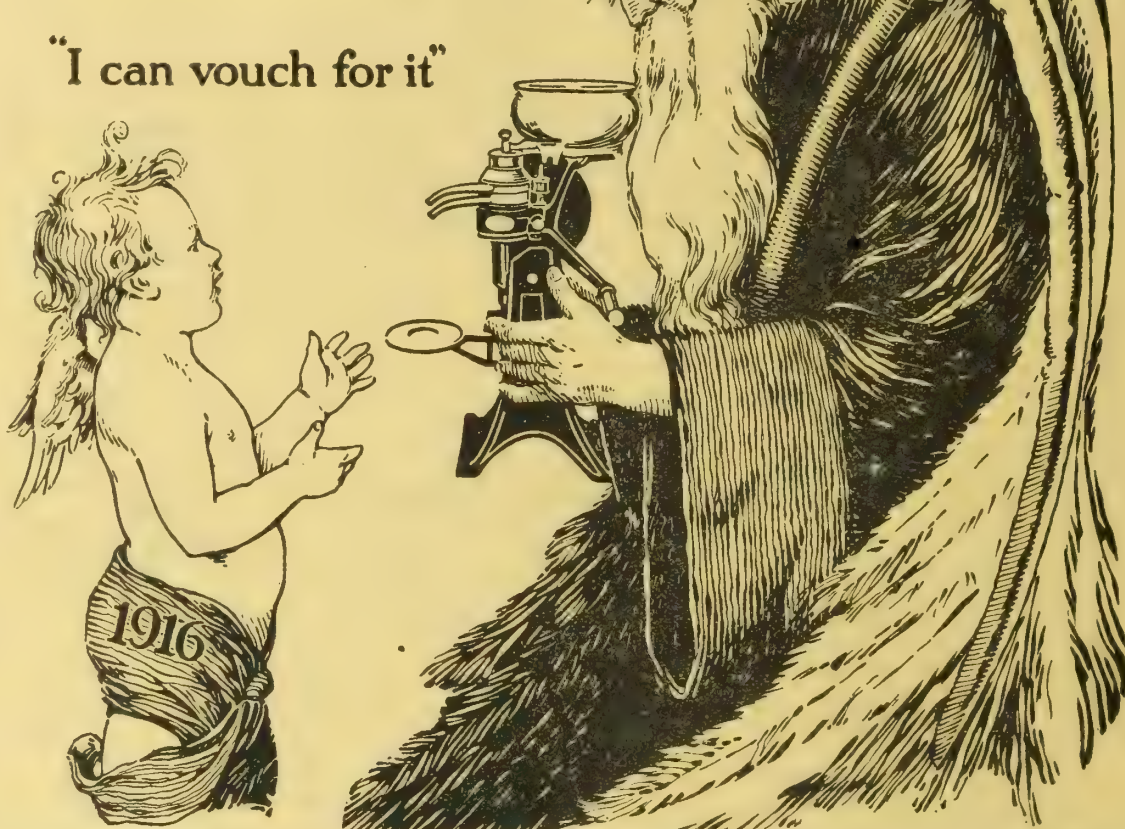
The dam of this young bull is "Nettie Pontiac Loto Korndyke." She made a record last March of 19.3 lbs. butter in 7 days; 74.6 lbs. in 30 days; as a Junior 2-year-old she is in the yearly test under everyday conditions and has to her credit at the end of the 9th month almost 500 lbs. butter. She is sired by a son of a 31 lb. daughter of Sir Veeman Hengerveld, one of the world's greatest bulls. She is also a granddaughter of "The King of the Pontiacs," who is well known.

Mr. Simpson was very fortunate to secure a bull which combines the

# DE LAVAL

## CREAM SEPARATORS

The original in 1878  
In the lead ever since



"I can vouch for it"

## Guernseys

High Class Registered Stock  
Records Well Known

Orders booked for young bulls for future delivery.

**D. H. Looney**  
Jefferson, Oregon.

## HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

**MOUNTAIN VIEW FARM**  
Mt. Vernon, Wash.  
Otto Rundgren, Prop.

## FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

**Plateau Farm**  
VASHON, WASH.  
E. M. SHIPLEY, Proprietor,  
Haller Bldg. Seattle

## Two Registered Jersey Bulls For Sale

A three-year-old sire by Eminent 24th. No. 79658. His dam is Brown Bessie of Maple Hill No. 217181. A heavy milker. He is solid lemon faun color.

The other is 22 months old, out of same sire, and his dam gave 40 lbs. milk a day, testing 6.2% with second calf. Price for either, \$150. A bargain considering quality.

**EDWIN PETTETT** Dungeness, Wash.

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable, preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best.

The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTLER LABORATORY, Berkeley, California.

## MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1 Lynden, Wash.



blood of all the above described animals, also an individual that has won in one of the largest classes in the world's fair. He will also increase in value as his dam and granddam will be retained in the herd and will have every chance to increase their records.

### GUERNSEYS AT PACIFIC INTERNATIONAL

The exhibitors of Guernseys at the Pacific International show at Portland last month were:

Albion L. Gile, Chinook, Wash.; D. H. Looney, Jefferson; John T. Whalley, Portland; Clover Hill Farms, Deer Island, Oregon; Spring Crest Stock Farm, Gresham; W. H. Dupee, Santee, Calif.; C. W. Beachem, Portland; Springcrest Stock Farm, Gresham.

Messrs. Looney and Gile won the leading prizes. First in age, senior champion and grand champion bulls, yearling and bull calves, went to Mr. Looney, who also won first on 4-year cow, 2-year heifer, junior yearling, heifer and heifer calf.

Mr. Gile won first prizes on 3-year cow, senior heifer calf, senior bull calf, junior champion bull, grand champion cow and first on young herd and on calf herd, indicating a superior foundation herd for breeding purposes and that correct methods have been put into practice.

The second and third prizes were divided up among the several exhibitors, Mr. Whalley taking first also on a fine heifer. The exhibit of Guernseys represented a very high class of this breed and attracted much attention.

### OLEO LEGISLATION

The National Dairy Union champions legislation which will prevent the brands that have heretofore prevailed in the sale of yellow oleo, by fixing a limit of color for it, which conforms to that which is now known in the trade as white oleo, and by changing the present tax to one cent a pound. Wm. J. Creasy, Catawissa, Pa., is the secretary of the National Dairy Union.

## STOCK

### DRY-CURING PORK

Rub each piece of meat with fine clean salt and allow it to stand from six to twenty-four hours in a pile on a bench or a table so the bloody serum can drain out.

#### Dry-Curing Mixture

For 1000 pounds of meat: Fine clean salt, 40 pounds; white or brown sugar, 19 pounds; white or black pepper, 4 pounds; red pepper, half pound. Mix thoroughly.

Rub each piece of meat thoroughly with the dry-curing mixture, taking care to see that it penetrates the muscles around the ends of the bones of the hams and shoulders. Pile the meat carefully with the skin down, in a cool, airy place, but avoid damp, musty cellars. Do not make the pile more than three feet deep, or let the meat stay more than three days without another application of the mixture, but after the second application no other need be applied for five or six days more.

A fourteen-pound ham should be allowed to cure for three weeks, or

## LAND AT ITS VALUE

The St. Paul & Tacoma Lumber Co. are offering direct to the public (no middleman's profit to pay) the very highest quality of shot clay, alder and cedar bottom land, on best of county roads, along the line of the Tacoma Eastern railway, about 20 miles from

### TACOMA

at \$35 per acre for the best.

Terms are \$2 per acre cash; balance as you need it, with special inducements for settlers.

This land has been examined and is recommended by the C., M. & St. P. Ry. Pamphlet and map mailed on request, and land shown by appointment by

**JESSE O. THOMAS, JR., AGENT.**  
320 Tacoma Bldg. Main 7818.  
Tacoma, Wash.

a day and a half for each pound of its weight. After this treatment, it should be thoroughly cured. Only two-thirds as much time need be allowed for giving a mild cure to be used during the spring.

Wash each piece with warm water and remove any extra curing mixture. Wipe it dry and hang up for smoking. When all the meat is ready, smoke with hickory, oak, apple, or in fact any wood except that of the pine family. About twenty-five smudges make a good mild smoke, but the taste of the user should determine this. Country cured meat may mould in damp weather without any injury, but it must be carefully wrapped or sacked to keep out the skippers.

### PROFIT IN HOGS

In a former article I told how not to make anything in hogs, and in this I am to point the royal highway to the pot of gold.

It is all in these words:

FEED ONLY WASTE.

Iowa farmers count it about an even break to feed 50c corn for 7c pork.

In Iowa language, 50c corn means \$17.85 corn in our Washington lingo; they reckon by the 56-lb. bushel and we by the 2,000-lb. ton.

As a matter of fact, pork will not average 7c alive in Washington.

The average, by the month, may

### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

**C. G. HENKEL,**  
Opportunity, Wash.



### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**  
Box 34, Milltown, Wash.

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

**DAIRYMEN—**  
**YOU**  
can get from  
one to five pounds  
more milk per cow  
a day by simply feeding—  
**Larrowe's DRIED BEET PULP**

**FIGURE** out what this extra milk production would mean to you in the course of a year and you will find it well worth while.

Discard high priced mill feeds. Put your cows on a straight alfalfa and dried beet pulp diet—and not only save money but make money.

Larrowe's Dried Beet Pulp is more than a food; it is a splendid conditioner as well. Read what one of California's most prominent dairymen says:

"When we fed corn silage our heavy producing cows remained in such poor condition that we were continually having some sick with some ailment or another. As soon as we changed over to alfalfa and dried beet pulp exclusively we noticed immediately a great gain in weight and improvement in physical tone, and they have ever since been maintained in what several prominent breeders have told us is 'almost perfect show condition.' A sick cow is now practically unknown in our dairy."



—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened.



GO TO YOUR FEED DEALER TODAY and order a single 100 lb. sack of either the plain or molasses dried beet pulp. Ask for Larrowe's. Test it on one cow whose milk record you know—and watch results.

### FREE! Our Booklet "Profitable Feeding"

—containing valuable information on feeds and feeding. Should be in the hands of every dairyman. Write for a copy—today.

## THE LARROWE MILLING CO.

339 Central Building

LOS ANGELES, CAL.

### RIVERVIEW FARM

Register of merit Jerseys and Berkshire Swine. A few big, lusty farm raised S. C. R. J. Red Cockerels for sale at \$2.00 to \$5.00 each.

**DAVID C. DILWORTH,**  
Buckeye, Wash.

### DUROC BARGAINS

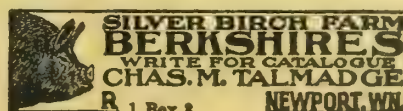
Weaned pigs, registered, \$7.50; boar and two sow pigs, \$18; bred gilts, \$15 to \$20. Defender, Crimson Wonder strains.

**SHADELAND FARMS**  
Amity, Ore.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

**HIGHLAND FARM,**  
Box 56 Underwood, Wash.



## Durocs

Sired by Burk's "Good Enough." Champion at Illinois Fair—Sow Vega Star No. 456070.

Young stock for sale—thrifty and choice.

Write for prices.

**MAPLE SPRING FARM**  
A. R. Beymer, Prop. Vega, Wn.

## BERKSHIRES

Pure bred, both sexes, young stock. Prices reasonable. Write for full particulars. Satisfaction assured.

**HOMER NELSON**  
Marysville, Wash.

### BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

**ALBERT C. HERRE**  
Route 1 Everson, Wash.





#### DUROC HOGS PROLIFIC AND PROFITABLE

Pure-bred Duroc pigs and registered dam of Mr. Albert R. Beymer, Vega, Wash. Mr. Beymer confirms the experience of Mr. Kaufman that there is money in hogs in Western Washington, where plenty of fern roots are available. He states hogs will leave a good patch of clover to dig up fern roots. In addition to the wild fern crop, Mr. Beymer finds it profitable to grow some field peas which are hogged off at the time the hogs should be fitted for the block. A little grain fed during the last month to five weeks gives a finish that attracts the best market prices whether sold on foot or in packed form to the retail trade. Mr. Beymer is an experienced hog raiser from Iowa corn state, who can see opportunities for profit here with several advantages for Washington.

reach 7c, but as most of the pork is sold at the low figures, the average is little, if any, above 6c or 6½c.

As corn is usually about double \$17.85 per ton, it follows that Washington farmers would need to get about 14c live weight to break even with corn as feed.

I say to "break even," for one must reckon risk, labor, interest and other items.

Every time while I hear some one saying he can raise pork for 3c or 4c; or stating how much he makes per acre with pasture—but all the same, I have never yet met the man who could show me a profit in hog raising on Puget Sound land—EXCEPT ON WASTE.

Waste seems very definite, yet it may be worth while to give a few illustrations.

By carefully selecting the sows that thrive under my conditions, in 14 years I secured a strain that would keep fat on fern roots without a mouthful of grain all winter. Of course, many would not do that—and I killed them.

Also I demanded that a sow should keep fat and raise 8 pigs on clover, without grain. On fern roots the sow merely kept herself fat; but on clover she must stay fat and raise 8 nice pigs. The pigs had grain in a creep; but the sows got nothing at all except clover and water.

By rigorous selection of both sows and boars at the end of fourteen years I had sows that met these conditions.

So long as I had wild land for clover pasture and wild fern land for winter pasture—why all I made from my hogs seemed like finding money.

This year I sold over \$600 worth of weaned pigs, and about \$1,200 in pork, buying about \$500 worth of grain. That seems a fair showing—but next year I will have only a dozen sows—BECAUSE I HAVE NO MORE WILD LAND—NO MORE OF THAT SORT OF WASTE.

Waste fruit, waste skim milk (far better feed milk to colts), waste peas left on ground after harvesting; ANY waste will make cheap pork;

but Washington farmers on land worth \$150 to \$250 per acre can never afford to raise pork as a main item.

Pasturing a cleared field allows the weeds to get a fine start.

One may mow the pasture once a month, but even then the weeds will be worse at the end of the year.

"Counting high taxes, interest, risk and all the other items, I figure that a gross return of \$50 an acre is the minimum—and a hog pasture will not reach \$50.

A sow is worth \$15 a year as a fern exterminator. As a digger of skunk's cabbage a sow earns good wages—but when it comes to raising 6c pork on a cleared Puget Sound farm—why, I have never met the man who could show me.

Of course, a corollary is that every farmer should keep only good, thorough breeds.

Mind the emphasis on the word "good," for there are many registered hogs that are decidedly scrubby.

My advice to Puget Sound farmers is to raise all the registered hogs he is able to—ON WASTE.

Unless he is raising registered breeders he can't afford to feed salable stuff to hogs—unless he is willing to work for nothing.

W. H. KAUFMAN,

Bellingham.

**Only \$2 Down**  
**One Year to Pay!**  
**\$24**

Buy the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 61-2 shown here.

30 Days' Free Trial. Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO. (12)  
2187 Marshall Blvd. CHICAGO



#### Ridgeview Duroc Jerseys

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.



#### Health First

If a cow is well—if her organs of production are doing their duty—she will yield well. Time was when the cow that became sluggish and seemed to be going backward was promptly sold to the butcher.

Thousands of cow owners have found that in most cases proper treatment will save them the difference between the price of a beef cow and a vigorous milch cow.

Most dairy cow ailments are simple if the source of the trouble is reached. If the organs of production or reproduction are not doing their duty, try Kow-Kure—the medicine for run-down cows. It has worked wonders in many herds, and is especially recommended for the prevention and cure of Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained Afterbirth, etc.

Keep Kow-Kure on hand constantly. Sold in 50c. and \$1.00 packages by feed dealers and druggists.

Write us for copy of our free book, "The Home Cow Doctor."

#### Dairy Association Co.

Lyndonville, Vt.

KOW-KURE AND DAIRY ASSOCIATION REMEDIES are distributed in Washington and Oregon by Portland Seed Company, Portland, Oregon, and in California by Germain Seed and Plant Co., Los Angeles, Calif.

#### SUNNY BANK JERSEY FARM

Island Type Imported Jerseys. Great producers, vigorous and strong individuals for heavy dairy work. Young stock of both sexes offered. Prices reasonable considering quality.

HARRY WEST,  
Scappoose, Ore.

Please mention this paper when writing.

#### ANKER HOLTH

We want to thank every man, woman and child who have said so many kind words for the ANKER-HOLTH Cream Separator.

We appreciate this, for it has helped us place hundreds of them in the farm homes; and there is no better indorsement than a satisfied user.

We are now in a better position than ever to supply the demand, as we have just received an extra large carload of over 200 machines.

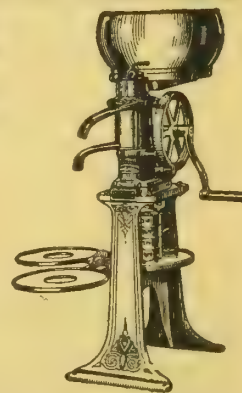
We also have a carload of Creamery Machinery and a carload of Milk Cans, both made by the Creamery Package Mfg. Co., whose goods are well known.

We extend to all a hearty invitation to call and examine our goods. We claim the ANKER-HOLTH Cream Separator is without a peer, and the Perfection Milking Machine is in the same class.

A Happy New Year to one and all.

THE J.C. ROBINSON CO.

46 First St., Portland Oregon



#### DAIRY CATTLE WANTED

Those having high grade young cows rich in blood of any of the leading dairy breeds (Jersey or Guernsey breeding preferred) to sell, will please give age, milking quality and price.

Have you pure bred Guernsey or Jersey sires of good form and breeding to offer at bargain prices, then please give particulars.

Pierce County Rural Development Co.

Geo. B. Woodbridge, Mgr.

923 A St., Tacoma, Wash.

#### Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock.

Also Registered Ayreshire Bull Calves at reasonable prices.

F. I. MEAD,

524 California Bldg.  
TACOMA, WASH.

#### Electric Light Farm

#### A. J. C. C. Jerseys

FOR SALE

A few choice cows with official records and tuberculin tested, also bull calves from Register of Merit dams and sired by Gerties Brown Lad, whose dam has official record of 11062 lbs. milk and 653 lbs. butter in one year. Prices very reasonable, for high quality stock.

Burt Pease

Ellensburg, Wash.

#### HOLSTEINS REGISTERED and HIGH GRADE

Large herd. Quality A1. Price low, because of small corn crop. Write for full particulars. Mention this paper.

J. M. LOCKWOOD  
Marengo, Iowa.

#### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.

#### GUERNSEY BULLS

In our recent shipment from the east are 2 very choice young bull, descendants from Gov. of Chene breeding which we offer,—a rare opportunity for high record and very choice stock. After inspecting many herds our selection was made from a noted importer of Guernseys.

#### DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

AUGUSTINE & KYER,

First St., Seattle, Wash.

#### "THE MEADOWS"

Carefully selected Dairy Stock of all kinds for sale. We try to give 100 per cent. satisfaction.

JOHN F. JANSSEN,  
"The Quality Buyer"

B. F. D. No. 5,

Seattle, Wash.

GOOD REGISTERED BERKSHIRES —

Chester pigs, \$10 each at weaning time.

W. D. GOOD, Mt. Vernon, Wash.



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### Egg Production Experiment at Western Washington Experiment Station,

Leading poultrymen of the Pacific Northwest are agreed that in order to make the largest margin of profit from poultry, it is necessary to have the conditions surrounding the fowls during the winter season, when eggs are high, as nearly like those of late spring as possible. Many have succeeded, so far as shelter and feed are concerned, but Supt. Linklater, of the W. W. Experiment Station, Puyallup, has been fortunate to secure the services of Mr. and Mrs. George R. Shoup, of Lynden, to demonstrate a more complete experiment along this line. One of the ordinary laying houses, 16x25 feet, at the station, was modified only slightly as described in January Bulletin No. 10 of this station:

Twelve 18-inch by 24-inch windows were put in the rear wall under the dropping boards, to equalize the light on the floor by day, costing \$5.00. An unbleached muslin curtain was hung over the wire net front, with rolling device for raising and lowering it, costing \$1.15. An outside mash trough was put the entire length of the front, under the curtain, costing 20 cents. A 300 candle gasoline lantern was provided for lighting the house mornings and evenings, costing \$6.00. The total expense for the material for the above alterations and additions amounted to \$12.35, and these may be considered permanent improvements.

The changes were made (1) to give abundant light during working hours, either day or night, (2) to guard fowls against the short, unexpected flurries of wind and storm that interfere with egg production, (3) to lengthen the working day to that of the spring day, (4) to supply regularly on schedule time, in a sanitary way, such materials as were needed to produce the manufactured article, eggs, (5) to develop and maintain the highly efficient winter egg laying pullet.

The feeds used include oats, wheat, cracked corn, and barley, for hard grain; bran, shorts, wheat middlings, ground oats, corn meal, and soy beans for ground grain; and fresh blood, ground liver, ground fresh bone, fish meal, meat scraps and clabbered milk for animal protein. The selection, however, was made as follows and fed at the time indicated.

#### Feeding Schedule (Special Management.)

5:30 a. m.—Gasoline lantern lighted. Dropping board cleaned.

5:45 a. m.—16 quarts sprouted oats, obtained from 8 pounds dry oats.

Daylight—Lantern turned out.

8:00 a. m.—4 pounds clabbered milk; also fresh water.

3:30 p. m.—10 quarts mixed grain by measure—2 parts wheat and 1 part cracked corn.

4:30 p. m.—Lumpy wet mash (5 lbs. of a dry mash mixture made of 2 parts by measure of coarse bran, 1 part wheat middlings, 1 part corn meal, 1 part soy bean or proteina,

12 quarts of medium sharp sand to each sack of bran used, ½ part of fish scrap or meat scrap, well mixed, wet with water salted as for cooking purposes. Ten pounds of green bone were used a week in this mash of the first 3 weeks of the demonstration. Since then, 2 pounds of green bone has been fed once a week and one pint of fresh blood substituted the other six days.)

4:30 p. m.—Lantern lighted.

5:00 p. m.—Water.

7:30 p. m.—Kale—two large stalks or enough small ones to equal them.

8:30 p. m.—Lantern turned out. Farm lantern hung five or ten minutes to show the way to the perches.

All day—Bran (coarse) in hopper, also grit, shell, charcoal, in hoppers.

One hundred S. C. White Leghorn pullets, of which 37 were January hatched, 39 March, and 24 May hatched, were in this house designated No. 2. Another similar flock was in another house, subject to good ordinary care and feeding, designated No. 1, which did not have the day lengthened by means of the lantern, nor did they get the green kale for the late feed.

In other words, pen 2, under special management, are cordially invited to rise at 5:30 a. m.—inducement bright light, kale (remainder from evening feed), grain in litter, and perhaps a few bites of mash in the trough. Their morning grain feed is an inviting form of a staple grain (oats), with the indigestible hull softened and the germ alive and growing, almost as good as digging up my lady's flower garden. Being a bulky form of feed, it is gone before supper time, so that the appetites are keen for a heavy grain feed at 3:30 p. m. Dessert comes on a little later as a balanced ration—wet mash with green bone or fresh blood added, and after a couple of hours of rest their only green feed of the day is offered, with bright lantern light still on. They are told to go to bed at 8:30 p. m. by substituting a farm lantern for the gasoline one. From start to finish they are kept shut in the house and are permitted to do only such things as are known to make for health and egg-laying. They are treated as high grade, well-handled machines, worth the owner's best care and attention.

The total cost of feed for pen 1, for five weeks ending December 13, was \$16.77. Number of eggs laid, 652, value, \$23.81. Profit over feed, \$7.04.

Pen No. 2 laid 1592 eggs, value, \$58.02; cost of feed, \$19.97.

The profit over cost of feed was \$38.02. Or, according to ordinary methods, as carried out with pen No. 1, the cost of egg production was over 30 cents a dozen, while according to method of pen No. 2 (special system), the cost of the eggs was less than half so much.

Twenty pullets in Pen 1 were laying November 9, and by December



A chick gains from two ounces at birth to two pounds in eight weeks—a gain of 1,500%. Thus you

can see how important it is that an ideal food be compounded in correct proportions and of proper food value. Such a food must be easily

available, palatable and absolutely pure.

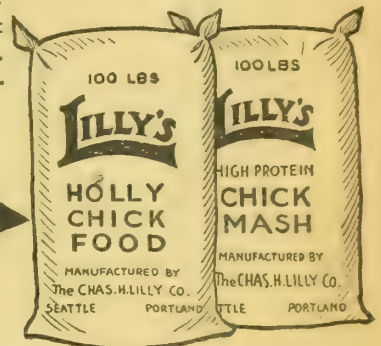
It cannot be made or thrown together by haphazard methods; neither can it be supplied by grain alone.

### LILLY'S HOLLY CHICK FOOD and LILLY'S HIGH PROTEIN CHICK MASH

fulfill all the exacting requirements of the growing chick. Do not be put off with substitutes. Insist on Lilly's.

If you are in the market for an incubator, let us send you our Pacific Coast Ideal Incubator Catalog. It will save you money.

Most dealers can supply you with Lilly's Poultry Foods and supplies. If not write us and we'll see that you are supplied. Write Lilly's, Seattle or Portland.



### BABY CHICKS

from my 3000 S. C. White Leghorns

means that they are well hatched, from strong, hardy stock, bred for egg production, vigor and good size. I guarantee safe arrival in good condition all chicks you order. Also send free with every order my book on "Raising the Chicks."

Price to May 1st, \$11.00 per 100.

Orders of 1000 chicks and over, \$10.50 per 100.

Write now for free catalog with over 100 testimonials.

### Oak Heights Poultry Farm

CAPT. A. WALDWICK, Proprietor  
R. F. D. 3, Box 67A, Tacoma, Wash.

### White

Orpingtons  
Rocks  
Wyandottes  
Leghorns  
Pekin Ducks

**HOW ABOUT SOME NEW BLOOD** in the poultry yard. This month we are offering some fine, vigorous white Leghorn breeding cockerels of the famous Barron egg laying strain, specially priced at \$3 each. Mention this publication in ordering.  
**Choice Pairs, Trios and Breeding Pens**  
Write for Description and prices

**ROYAL WHITE FARM**  
Kirkland, Wash.  
Box 101, R. F. D. 1, (Near Seattle)  
Mrs. C. M. Whitman, Prop.

For Sale—Fine Turkey Gobblers and Emden Geese.

MISS E. M. KELOGG  
R. F. D. No. 3 Tacoma

13, 78 pullets had laid in Pen 1.

Twenty pullets in Pen 2 were laying November 9, and by December 13, 95 pullets had laid in Pen 2.

Both flocks were in good health, free from vermin and in a thrifty condition at the end of the fifth week of the demonstration.

Before the meeting of berry grow-

### KRESKY BROODER STOVES JUBILEE INCUBATORS

Poultry Supplies and Remedies

#### DAY OLD CHICKS

From fine laying strains of Barred Rocks, S. C. Reds and White Leghorns, and eggs by the setting or thousand. For particulars write

JOHN L. CRAIB

1022 Western Avenue, SEATTLE

#### TRAP-NESTED

### WHITE LEGHORNS with high Egg Records

Our circular and price list gives both individual and pen records of our flock. Our exceptionally promising matings for this season are fully described in the circular. We respectfully solicit your correspondence in regard to hatching eggs and baby chicks.

**Westergaard & Saeman**  
BOX H ZENITH, WASH.



ers at Puyallup assembled for the purpose of organizing a poultry association. Mr. Shoup stated they were able to show a profit of \$3.68 for each fowl at their own plant at Lynden. The average price received for their eggs through the year was 30 cents per dozen.

In her brief address before this meeting, Mrs. Shoup gave three essentials for success in securing a satisfactory profit margin from poultry raising: First, take every precaution to prepare against the unusual, for instance, a sudden wind storm or snow; therefore a long muslin curtain in front of a house, easily and quickly drawn, as one example of other requirements.

Second, plan to have ample succulent feed for every day in the year, either kale, clover, cabbage, or roots, such as mangels, carrots, etc. Grow all or at least several of these to be sure and have enough for the every day feed.

Third, have enough pullets to maintain and to keep up the laying pens and this requires that double the number kept should be hatched, for there is a certain average fatality, including culls, which should not be included in the pens for layers.

Start working with what you have, was Mrs. Shoup's advice to the berry growers who are enlarging their poultry plants, but it is best for a large egg industry that the individuals in a community should adopt a uniform system, gradually working towards an ideal adheringly.

### BREEDING FOR EGGS

By C. Westergaard, Zenth, Wash.

The bulk of all hens are raised for the sake of the market egg. Unfortunately a goodly portion of those which are raised to produce market eggs fail "to deliver the goods." Sometimes the hens are at fault but just as often the environment is not propitious for the furtherance of this special function.

In order to produce eggs in quantity we must have birds from a breed with a high average production, and furthermore we must see to it that we get birds of a strain in which the laying quality is well accentuated.

Such birds given proper care at the hands of a competent poultryman will bring results. But it is not enough to have good birds to start with—they must be bred and cared for in such a way as to maintain their efficiency.

While the trap-nest is the sure way of selecting the breeders and weeding out the loafers it is by no means the only way and certainly not the cheapest way for the average poultryman. Hence we do not advise the average poultryman to trap-nest except to a very limited extent if at all. We would advise him, however, to get his foundation stock and such new blood as he may wish to add from time to time, from reliable breeders who trap-nest. Trap-nesting properly done, while very fascinating, involves a great deal of time and labor.

Experienced and successful breeders by a careful study and practice of pelvic bone methods and the usual careful observance of the individual birds are able to keep up the laying qualities of their stock without the use of the trap-nest. While we do not advocate trap-nesting to average market egg producers we have to confess that the trap-

nest has taught us more henology in two years than we would have been able to get out of books, because of confusion, in twice that time.

The majority of the loafers can be identified without the trap-nest and properly disposed of and it is a waste of time to keep records of birds that are not even promising as breeders. In that way most of the extra time devoted to trap-nesting will go to the birds that deserve it.

Personally, we like to have all our buildings equipped with trapnests so that nests can be used as trap nests when so desired or can be hooked up and used as ordinary nests.

In not encouraging extensive trap-nesting we have in mind the female birds in particular. As for the male birds we are urgently in favor of the pedigreed male to head the breeding pen. When one considers the numerous progeny of a single male during the breeding season it is not difficult to figure out how an apparently high first cost becomes very trifling when divided up among the progeny. Let us make a very conservative illustration. Suppose we pay \$10 for a rooster, which is above the average price paid for even pedigreed birds. Such a bird mated to fifteen females should have no difficulty in increasing the laying quality at least 100 mature pullets. Even with those conservative figures our pullets have only cost us ten cents extra per bird. Is it any wonder that the experts are willing to pay high prices when they know that they are getting what they want?

#### Significance of Term Pedigreed.

Pedigreed birds are obtained by hatching the eggs of individual birds either in pedigree trays in the incubator or under hens thus making it possible to mark the resulting chicks, which accordingly can always be identified at any time. If such chicks have been bred for eggs (as is most often the case) then we may be able to know the performance of their ancestors for several generations. But any bird of which we know definitely its dam and sire can be considered pedigreed. The pedigree of course largely and for the most part determines how much the bird is worth beyond the ordinary market value.

All hens should be legbanded in order to keep tab on individuals, as well as to facilitate keeping track of the ages of different birds.

The saying that the "late layer is the heavy layer" is fortunately being heard oftener and likewise being heeded. This has been definitely shown by trap-nest work. But still at times we hear parties consider themselves fortunate if their birds molt early as they say their hens will then be ready to commence laying again while eggs are high. There may be circumstances under which birds may molt earlier than they would otherwise. According to our experience, if hens are so handled as to keep them in good laying condition then a number of the best ones will continue to lay until late in October and November and by the first of December those heavy layers that began the molt earlier will again be on the job. Under average laying conditions it has been our experience that the large majority of the birds that begin the molt before the middle of August or the first of September includes practically all the loafers and the majority of the indifferent layers. We have found a few exceptions but

not enough to materially affect the average. Occasionally we find a hen that is apparently molting, but as indicated by her comb and pelvic bones she is still laying. Hens of this kind that molt gradually are likely to include the top-notchers of the flock and it pays well to be on the look out for them so that they may be reserved for the breeding pen. But the same is true of the hen that lays late and then loses practically all her feathers at once. Such hens are in grave danger during cold spells and it may at times pay to resort to artificial heat for such individuals. Being vigorous they lose no time in getting their new dress ready.

#### Breeders and Vitality.

Should the breeders be given a good rest before the breeding season opens? Individual cases in our pedigree work does not entirely lead to that conclusion. In the case of two hens which rested only 32 and 34 days respectively after a season of exceptionally heavy laying, laid eggs that apparently were as fertile as the average and the resulting chicks apparently showed no sign of weakened vitality. One hen after taking a vacation of 40 days produced eggs from which we had two consecutive hundred per cent. hatches of seemingly sturdy chicks. Furthermore we have not been able to note any difference in fertility, hatchability, or vitality of the resulting chicks as between our heaviest layers and the average of the flock.

Heavy laying is said to be a heavy drain on the vitality of a bird—maybe it is — but heavy laying birds usually have an abundance of it and a hen that lays 208 eggs in her second year or 184 in her third year shows that she has managed to conserve her vitality in ample amount for her needs. These items are based on the assumption that birds are handled under average conditions with healthy surroundings, no stimulants, and a sufficiency of fairly well balanced rations.

### PRACTICAL HELPS TOWARD STANDARDIZING EGG INDUSTRY

(Continued from page 4)

"Well packed in 30-doz. cases" means that the cases and fillers are free from mould or fungus, that the flats and fillers are not soiled by broken egg yolks, or shell gummed down on them, and there are no broken strips in the fillers, nor pieces out of the flats, nor mud nor soiled straw in the bottom of the case. It is a good advertisement to have each case neatly labeled on each end, to identify the product, and create a demand for that case pack.

"Delivered regularly" means about the same supply every week in the year. A store that can be sure of this even supply, relies upon it, and as long as quality is maintained, is a regular customer.

"At stated intervals" means the same day or two days in each week not Monday this week, Wednesday next week and Friday next week, but Monday and Thursday this week, Monday and Thursday next week, and so on each week of the year, rain or shine, snow or sleet, spring or fall.

"Whites that stand up, not watery" means that the candler finds a firm white surrounding the yolk in such a way that the yolk doesn't change position instantly, if the egg is turned about.

"Clean eggs" are those without

spots of dirt or stains, or finger marks, attractive in their fresh clean appearance.

"Dirties" are eggs soiled in anyway whatsoever. They detract from the appearance of a case and bring down the price.

"Checks and cracks" are eggs more or less broken. Held before the candle checks show hair line cracks. The "cracks" are those with plainly visible cracks and broken shells. These eggs spoil much more quickly than whole shelled eggs and should be kept for home use. It is money saved all around.

"Spots" are those eggs having a blood spot attached to the yolk or white. The cause is some irritating food causing the yolk to break into the oviduct with a drop of blood attached to it. It does not mean that incubation has been started. Hens laying "Spots" should be used on the table or marketed.

"Rots" are spoiled eggs. Causes are various. Roosters with hens after breeding season give fertile eggs that rot after incubation which has started by hot weather, is checked for some reason. Swat the rooster to help get rid of this trouble. Infertile eggs keep better, keep longer and do not "rot" in any case. Then gather all eggs often and store in cool quarters.

I wish to urge each and every producer of eggs, either of small or large numbers, to take this matter of loss to heart and do his or her part to overcome it. Talk it up at neighborhood gatherings. Grange meetings, anywhere and everywhere that producers meet. Don't stay fifty years behind the times. Move up abreast, cull you eggs rigidly before you offer them for sale. Call your dealer's attention to the condition of your eggs, and keep it up. See that you have only birds that lay a first class product. Life is too short for you to fuss around with any hen that gives you an "off" product whether it is too small, badly shaped, thin shelled, limey shell or a spot. Get rid of her. Clean up the nests, burn all mouldy fillers, straw or excelsior, in your egg cases, do everything in your power to put before the buying public good sized, fresh, wholesome eggs.

### CALIFORNIA LUBRICANTS WANTED IN EASTERN MARKET.

"The shipment of California lubricants to eastern and middle west markets by the Standard of California is increasing greatly. No figures whatever are available as to the extent of this trade but there would be great surprise if there were such figures published. Zerolene lubricants have gone east in large quantities by both train and ship. The engineers of several leading auto manufacturers have pronounced in favor of asphalt base oil for lubricants and consumers are learning its advantage. One advantage claimed for lubricants properly made from asphalt base oil is an immense superiority in withstanding cold weather, a very important factor in the north and east. And there is not enough asphalt oil in the east to supply the demand once the consumers all perceive this. Abroad, it has long been known that the Russians have made the best lubricants by far for withstanding cold, and their oil is asphalt base like California's. It is even said that some California lubricants shipped east have found their way back here blended with eastern and under new brands."—California Oil World.





# Open-Minded Men Recommend Feeding SHADY BROOK

**Read what Mr. W. H. Paulhamus of Puyallup, Wash., has to say about Shady Brook.** It is printed here to give you an idea of what other business dairymen think of Shady Brook. **Shady Brook Dairy Feed** is absolutely good cow feed. Our strongest claim for your order is that **Shady Brook Dairy Feed** has given satisfaction to its many patrons during the last six years. It is made of absolutely clean, wholesome raw materials in a clean mill which confines itself to pure foods for livestock. In **Shady Brook** there is no by-product, no waste, no cheap filler. Shady Brook is carefully and honestly made of the very finest quality of alfalfa and molasses that is guaranteed to contain 50% sugar.

**ASK FOR BOOKLET No. 60**  
Manufactured by SHADY BROOK MILLING COMPANY, Walla Walla, Washington

**FOR SALE BY ALL DEALERS**  
Write for Name of Nearest One

**The Puyallup and Sumner Fruit Growers Association**  
Volume of Bulletin, 1914, 21,250,000.00  
Puyallup, Washington, November 14th, 1915

Realizing that the marketing price of milk during the past year has been extremely low, we are particularly anxious to find the very best cow feed at the lowest possible price.

One of the feeds that I have been using with considerable success in my own barn at Sumner, is the **SHADY BROOK DAIRY FEED**. The foramen in my barn gives the good results. I have investigated this cow feed and find it consists of good, clean, wholesome alfalfa blended with molasses.

With kind regards,  
W. H. Paulhamus

**Analysis**  
Crude Protein, 14.75 per cent  
Crude Fat, 1.10 per cent  
Carbohydrates, 63.96 per cent

## FATHER HYLEBOS ON KAR-RU

Tacoma, Wash., Jan. 10, 1916.

Mr. P. H. Hebb—

Dear Sir: In 1871, towards the middle of January, I rode on horseback for 21 miles along the Columbia river, in a fierce cold wind, and when I reached my destination, my left leg, which had been most exposed, was almost useless. My friends declared it Rheumatism.

Since then I have been troubled more or less continually with that painful disease. I have consulted hundreds of doctors here and in Europe. I have tried hundreds of remedies to the full of their requirements. I felt some beneficial temporary effects from them as from the many mineral watering places here and in Europe, but relief is far from cure. Five years ago my rheumatism became very inflammatory. For six months I could not hold a pen and write a note. Up to last year, therefore for four years, I spent a good deal of my time in bed, almost unable to move and counting the hours of the night especially.

Now for nearly a year I have taken your remedy with splendid effect. Maybe this letter will come to hundreds of sufferers. If it does, I am pleased to know that it will give them information they can make use of to direct them on the road to recovery. For over 40 years I have been at a loss for such information, and paid for it with pains and aches. I have studied the disease in any kind of medical work that I could find, and got information from doctors of different medical schools. Rheumatism, I have been told, is caused by uric acid; others say it is a germ or microbe, or define it by some name outlandish to most people. Whatever it is, it dies hard, very hard, but KAR-RU will kill it. I find myself today a much younger man than I was 20 years ago, and I enjoy every day I live in. KAR-RU cures.

(Signed) REV. FATHER HYLEBOS,

Vic. Gen. Em.

Write for full information, and testimonial folder.  
Kar-Ru Chemical Co., Tacoma, Wash.

## KAR-NITUM A Remedy for Tubercular Cattle

Our advertisement in the December number has attracted wide attention and the numerous responses indicate honest doubts on the part of many as to what Kar-Nitum will accomplish in relief of tuberculosis. In connection with good sanitary surroundings, and proper shelter, Kar-Nitum given with sufficient nourishing feed has caused a calcification of the tubercular bacilli, so that it has become inert in from three to six months. It is a constitutional remedy which penetrates the nerve centers and causes a reaction of the vital force, aiding digestion and assimilation of the natural elements of the food substances, thus fortifying the system against disease germs and their toxins in the restoration and maintenance of health.

In too many cases in the past cattle after being tested and given a certificate of health, on retest have reacted. Instead of submitting to loss by disposition at less price than their actual value, we recommend a trial with Kar-Nitum, knowing as has already been demonstrated that relief and restored health will be the result.

We invite correspondence from those whose herds are afflicted with tuberculosis or other diseases.

In order that a great number of stock men will become acquainted with the real value of Kar-Nitum, the purchase price will be refunded, on every box sent out for the next thirty days, if the remedy fails to do everything we claim for it.

Each box contains enough Kar-Nitum for six months' treatment for one animal if affected. Enough for one year if used as a preventative.

Price Per Box, \$5.00

PREPARED BY THE

KAR-RU CHEMICAL CO.

P. H. HEBB, President

TACOMA, WASH.



Don't kill a valuable sire, cow or youngster which reacts. Use Kar-Nitum.

## Tested Seeds

## NEW STOCK

## Sudan Grass

to introduce this valuable grass we will mail to any address 1 lb. postpaid for 15c.

## New Catalogue

Our beautiful catalogue is now ready, send in your Name and Address and we will mail you a copy free.

## Aabling - Ebright Seed Company

89 PIKE ST.

SEATTLE, WASH.

## Raw Ground Limestone

## HYDRATE FERTILIZER LIME

Air slacked lime. Land plaster. Now is the proper time for application. A Full Line of Building Material.

Write us for prices.

## Tacoma Trading Company

1715 DOCK ST.

TACOMA, WASH.

PHONE MAIN 21

C. S. Barlow, Prest.

## SEEDS

If you are looking for Good Seeds

Send for our Catalog Just off the Press-lts Free

SEATTLE SEED CO.

SEATTLE, WASHINGTON

For Real Success in Walnut Growing Plant Our

## Pedigreed Walnut Trees

There is no Walnut on the market giving better profits to the grower or more all round satisfaction than our

VROOMAN STRAIN OF FRANQUETTES

Strong, healthy trees, grafted from stock with a record. We also carry the SAN JOSE MAYETTE, another big producer. Write for our price list at once.

ELMER BROS. NURSERY

80 South Market Street,

SAN JOSE, CALIF.





# "This Calf Meal Saves Me 50% Because It Takes The Place of Milk"



It is a recognized fact that a properly constituted Calf Meal is equal to, and in many respects superior to cow's milk in the raising of calves. One of the objections to Calf Meal in the past has been the bother of having to prepare it and its expense. Those two negative factors have been entirely eliminated in

## LILLY'S CALF MEAL

You ask why? Because we are preparing it at a lower cost, and because we — not you — thoroughly cook it under sixty pound steam pressure, thus removing excessive moisture and at the same time making it *all food*, easily digested. One pound of Lilly's Calf Meal goes much farther than ordinary Calf Meals, because of its superiority in manufacture. Lilly's Calf Meal comes to you *fresh and sweet* with that nutty flavor so relished by the calves.

*Some of the largest breeders in the Northwest use Lilly's Calf Meal. The Willowmoor Farms use it exclusively for their prize winning herd of Ayreshire cattle.*

We have a very helpful booklet on raising calves, which we will be pleased to send you on request. Dealers handle Lilly's Calf Meal. If yours does not, write LILLY'S, Seattle, Wash.





# NORTHWEST HORTICULTURIST & DAIRYMAN

College of Agriculture  
University of Washington

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., FEBRUARY, 1916

No. 2

## THE PRESIDENT AND PREPAREDNESS.

President Wilson is spending considerable of his campaign stunts on "Preparedness." This matter should have a reasonable amount of attention, of course. But what is the use of going to extremes? Congress is elected to enact measures that will serve this nation based upon the latest and best of known methods without the savory of so much pork barrel propaganda.

Very humiliating to this nation from the statesman's point of view was our dealings with Mexico, when we held the Port of Vera Cruz and were actually at war with them.

A "preparedness fleet" was not lacking but it was used in a cowardly inefficient way. It

would have been perfectly easy for Uncle Sam to have "shoved out a plank" to the Mexicans on which they could operate as a temporary foundation for the building up of free schools, a free press and a condition which would permit them to worship according to the dictates of their consciences; in other words, the same opportunities for self government, as the former administration imparted to the Philippines, the Cubans and the Porto Ricans. What is the use of preaching preparedness when we give no heed to the calls for help of the down-trodden, innocent people of a neighboring country, while actually in control of their possessions?

Mr. Wilson has been the cause of the speedy enactment of a good law governing finances, is a scholar and as president is exemplary in many respects, but as a statesman in the opinion of many of high authority, he compares as a school boy to a full grown man, and this may be uttered concerning an official without regard to party politics.

Extreme views are held on preparedness. The military leaders want the strongest navy in the world that would necessarily be accompanied with a very burdensome war tax. On the other hand many well meaning, prominent leaders believe we should do away with militarism and spend our efforts and means in world-wide peace movements.



SOPHIE 19TH OF HOOD FARM 189748,  
The Long Distance Grand Champion Dairy Cow of the World.



REGISTERED JERSEY COW ROSARIA'S OLGA MAIDEN,  
Whose record is 7932.8 lbs. milk and 529 lbs. butter in 365 days, being first in production, also for cows under 2 years old for month of November Register of Merit American Jersey Cattle Club. Burt Pease, owner, Ellensburg, Wash.

In the light of past history it would hardly be wise to adopt either plan. Universal peace can only be brought about as the fruit of the Christian religion, and that is produced by the witness of the individual person or church organizations and not by the government, but so long as world powers are permeated with evil our government may protect these witnesses as well as other interests when prepared to a reasonable extent.

## PUYALLUP VALLEY BERRY GROWERS.

At the recent annual meeting of the Puyallup and Sumner Fruit Growers' Association, President Paulhamus showed a million and a half dollars value of business transacted in 1915. The growth and the development of the association is along broad, progressive lines. New departments are added as fast as prospective markets warrant.

## LONG DISTANCE DAIRY RECORD.

The highest long distance dairy record in the world is claimed over all breeds for Sophie 19th of Hood Farm, the world's champion Jersey cow.

In 1914 "Sophie" broke the Jersey breed record with a production of 17,557.8 lbs. of milk, 999.1 lbs. of butterfat. She calved on August 21, 1914, and was started on September 20th on the test which she has just completed. Milked but twice a day, and carrying a calf 175 days of the test, "Sophie" completed her sixth lactation and sixth year's record with a production of 11,915.4 lbs. of milk, containing 680.5 lbs. of fat, or 800.6 lbs. of 85% butter.

Her six records are as follows:

Age 2 years 2 months, milk 7,050.2 lbs.; butter 446 lbs.

Age 3 years 8 months, milk 9,924.8 lbs.; butter 672 lbs.

Age 4 years 11 months, milk 14,373.2 lbs.; butter 1,006 lbs.

Age 6 years 7 months, milk 15,099.4 lbs.; butter 1,097 lbs.

Age 7 years 11 months, milk 17,557.8 lbs.; butter 1,176 lbs.

Age 9 years 7 months, milk 11,915.4 lbs.; butter 800 lbs.

A total of 75,920.8 lbs. of milk, 5,217 lbs. of 85% butter, for six consecutive lactations earns "Sophie" the title of World's Champion Long Distance Dairy Cow. Sophie 19th of Hood Farm is owned by Mr. C. I. Hood, of Lowell, Mass., and was tested under the supervision of the Massachusetts Agricultural College, says the American Jersey Cattle Club.

She is ideal in shape as a perfect dairy cow. The reader will do well to get her form well fixed in mind.

The soda fountain syrup industry has become a large item with good prospects of using most of the present acreage of the valley for juice making purposes.

It has taken time and considerable experimenting to make a standard product for soda fountain purposes satisfactory to the trade, and at a low enough cost for a fair margin to producers. The business of selling it, as with jams and jellies, is a matter of some expense and growth.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

Address all communications to Box  
1604, Tacoma, Wash.  
(Office 511 Chamber Commerce Bldg.,  
Cor. 9th & C Sts.)

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Paid in Advance. Otherwise 75 Cents.  
Six Months, 30c. Three Months, 20c  
in Advance.

Canadian, other foreign, also when deliv-  
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## EDITORIAL STAFF CONTRIBUTORS

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J. L. Stahl, Horticulturist.  
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A. B. Nyström, State College, Pull-  
man, Wash.

On page 40 appears the advertise-  
ment of Western Washington Hol-  
stein Breeders' Association's third an-  
nual sale. After that page was print-  
ed, the sale is postponed until May  
3rd. Those interested will please ob-  
serve the change of date.

The consumption of walnuts in the  
United States more than doubled dur-  
ing the past ten years. At the last  
census 22,026,524 pounds were con-  
sumed. The American people will  
consume a much larger crop if the  
nuts can be produced and put on the  
market at a little lower rate and yet  
afford a satisfactory profit margin to  
the growers.

## WILL CANCEL OUR DEBTS.

It is estimated that before the war  
broke out some six billion of Ameri-  
can securities were held abroad. The  
annual interest even at a low rate  
was a big item for the people of this  
country to meet. Over a billion dol-  
lars of securities and gold have al-  
ready been returned to this country,  
and while it may take some time for  
readjustments, capital will be avail-  
able for many manufacturing enter-  
prises in America, even to the thous-  
ands of small farms where each unit  
is virtually a manufacturing plant.  
It is necessary, however, that the  
articles manufactured are in stand-  
ard form to attract investors.

We are making accounts balance  
while becoming more self reliant.

## THE GROWERS COUNCIL.

The Growers Council organization  
started last spring did not secure  
control of the majority of the fruit  
tonnage in tangible form, hence did  
not accomplish the purpose intended.  
It was not sufficiently financed with  
definite plans worked out in detail.  
Many of the growers were extremely  
anxious to get every possible nickel  
for the 1915 crop without regard to  
future operations for their own wel-  
fare. Some day in the near future  
the growers will unite under a prac-  
ticable working plan to control the  
selling of their own fruit products.

## ON STILTS.

Mr. Elias Nelson, of Hunters, Wash-  
ington, directs attention to the fact  
that the article on the "Cost of Ap-

ples" in the December issue was  
based on a yield of 120 boxes per  
acre, while the cost is much lower  
with a yield of 233 boxes per acre,  
which is true. This principle ap-  
plies to nearly all classes of the  
rural crops. The greater the yield  
and the better the average quality  
the lower is the cost of production  
for the entire salable crop. Apple  
growers are not frightened because  
the estimated cost of a low average  
yield seems high. Many are growing  
apples at less cost than the bushel  
of potatoes, and the average market  
price is certainly higher. The diffi-  
culty or mistake, it appears, lies  
chiefly in over-valuations. A bearing  
apple orchard actually worth from  
\$600 to \$800 an acre is estimated by  
its proud owner at \$1500 to \$2000  
per acre, and naturally both the as-  
sessor and the surveyor for cost es-  
timates finds an easy field to make  
high levies and valuations. The cost  
of operation is likewise estimated on  
the same high basis, and the cost of  
material such as boxes and sprays  
can be reduced by making purchases  
co-operatively. But it is very diffi-  
cult to get rid of our exalted ideas.  
In other words, we are still making  
use of stilts. The great problem be-  
fore apple growers in the Northwest  
is that of enlarging the market.

## THE HOOF IS GOLDEN.

Colorado lambs topped the Chicago  
market recently at the phenomenal  
price of \$11.25 per cwt., and there is  
no prospect of overdoing the lamb  
crop in the immediate future. Why  
not put in some wire fences inclos-  
ing certain fields to keep out dogs  
and coyotes, then make cross fences  
of movable pannels, raise some sheep  
on the weeds and grasses that are  
otherwise wasted. The animal that  
can be raised so cheaply as sheep  
producing both wool and mutton at  
present market rates is attractive to  
enterprising farmers. Truly may it  
be said of sheep—the hoof is golden.

## WALNUT CULTURE.

Some very practical points  
on the cultivation of walnuts are  
given by Mr. Fred Groner, of Hills-  
boro, Oregon, who is a successful  
grower, in a recent number of the  
Pacific Homestead. According to his  
advice:

Dig the hole from 30 to 36 inches  
in depth and diameter and place the  
tree about 3 inches below the depth  
it grew in the nursery so that culti-  
vation will not interfere with the  
upper roots. The dirt from the hole  
should be put in two piles so that  
the surface dirt can be put back first  
and the lower and heavier soil can  
be put in the upper part of the hole.  
Before the tree is put in the ground  
all broken roots should be cut off  
with a sharp knife and also all the  
ends should be cut back to good  
green wood as the dead wood caused  
by digging and handling of the tree  
would interfere with the forming of  
the calous on the ends where the  
greater part of the young rootlets  
come out. After the tree is put in  
the hole the dirt should be worked  
in between the roots, carefully  
spreading them out in their natural  
position. When the hole is filled  
within four inches of the surface, if  
the ground is not too wet it should  
be firmed down with the foot and  
then filled with loose dirt.

Do not put too much work on your  
ground early in the season, usually

once over with the disc or spring-  
tooth harrow the fore part of April  
is best. Then wait awhile, leaving  
the ground open and if the weather  
begins to get dry or after a shower of  
rain has dried off go over it again.  
A little later or after another rain  
go over it with a peg-tooth harrow.  
Then if the ground is too open or  
cloddy a trip over with the corrugated  
roller will be of great benefit. Then  
repeat the operation, possibly leaving  
out one trip of the disc or spring-  
tooth harrow and the roller if not  
needed and in their place use some  
other implement, the Kimball or peg-  
tooth harrow. If the ground is left  
several days without cultivation after  
a rain the escape of moisture will  
be so rapid that the loss will be much  
greater than the gain. This point  
is highly important and should not  
be neglected.

Many orchardists often let the  
moisture escape through lack of sys-  
tem and then roll around the dry  
clods the rest of the season. We  
make from 8 to 10 trips over, usu-  
ally finishing about July 15. We  
usually hand work around our trees  
while they are young and also make  
one round with the one-horse culti-  
vator along each row as the larger  
implements can not be run close  
enough to do thorough work without  
danger of damage to the trees.

## Inter-Cropping.

Crops can be raised on about  
three-fifths of the space between  
the rows in 40-foot planting and  
about three-fourths of 50-foot plant-  
ing, leaving about 8 feet on each  
side of the rows for clean cultiva-  
tion to hold the moisture for the  
benefit of the trees. This can be  
continued five or six years and the  
cultivated strips widened the last  
two years as the trees get larger.  
Where other farm operations are  
connected with the orchard, crops  
can be changed in rotation. Vetches  
(with oats or wheat to hold them  
up), corn, peas, potatoes, pumpkins,  
or turnps can be raised to good ad-  
vantage.

I do not approve of plowing the  
strips along the trees in the Fall.  
Let the weeds grow during the Fall  
and Winter. Fall plowing will re-  
duce the humus in the soil (under  
conditions here) that is usually badly  
needed.

I do not believe it advisable to  
cultivate the whole space between  
the trees clean without crops of any  
kind the first five or six years as the  
trees will be too small to take up the  
available plant food and much of it  
will be lost.

With the orchard cultivated clean  
the sixth or seventh season a cover  
crop of vetch and wheat should be  
sown about the 15th of August to  
increase the humus in your soil and  
absorb the available plant food dur-  
ing the Fall and Winter and give it  
off to the trees the next growing  
season. Winter oats should not be  
sown with vetch in the Fall for a  
cover crop, as it grows very little in  
the Winter. If the cover crop should  
be plowed under after it gets too  
coarse and stiff or after the ground  
gets too dry, the benefit of the cover  
crop may be entirely lost besides a  
great loss of moisture that would  
cause a serious curtailment of  
growth and bearing of the orchard,  
owing to the openness of the soil  
held up by the material plowed un-  
der; but if plowed down at the right  
time and the ground closed up by

working with harrow, disc, and roller,  
before it is permitted to dry out and  
the moisture of the later Spring  
rains properly conserved by the right  
kind of cultivation, plenty of mois-  
ture should be retained to make vig-  
orous growth and mature a heavy  
crop. This cover crop should be  
continued annually unless acidity  
should occur which would not be  
likely in a bearing orchard.

Since we have our money invested  
in our land and also in our trees, we  
should shorten the period that this  
expense runs between the time the  
trees are planted and the time they  
begin to bear an income by giving  
the trees the best possible care, and  
yet many of us through false econo-  
my, lack of system, or slipshod  
methods, carry this expense from  
one to three years longer than neces-  
sary and the cost of the income bear-  
ing orchard is much greater than it  
should be.

## SPRAYING.

Get ready for spraying next month  
and see that the work is thoroughly  
done. The lime-sulphur mixture is  
standard for the control of scab and  
scale. Use good force pumps and  
good nozzles so that the spray will  
penetrate all parts of the twigs.  
Every leaf and fruit bud should be  
covered because here are the places  
from where the scab spreads as soon  
as growing conditions prevail. There  
are different formulas of the lime-  
sulphur varying in strength from 1  
to 15 to 1 to 30, the stronger of  
course should be applied during the  
dormant season. The Bordeaux is  
also standard in formulas varying  
from 4-4-30 to 4-4-50. Observe direc-  
tions carefully when preparing to  
spray.

## WESTERN WASHINGTON HOR- TICULTURAL ASSOCIATION CONVENTION.

Program for meeting at Olympia,  
Wash.:

Thursday, Feb. 24—9:00 A. M.  
Address of Welcome—George A.  
Mottman, Mayor of Olympia.  
Response—S. J. Harmeling.  
Annual Address of President—R.  
B. Miller, Startup.  
Reports of Officers.  
Reports of Committees.  
Other Business.

A Phase of the School Problem in  
Agriculture and Horticulture, Mrs. R.  
A. Small, County Superintendent of  
Schools, Everett.

Nursery Stock, J. B. Pilkington,  
Nurseryman, Portland, Ore.

Afternoon Session—1:30 O'clock  
Black Spot Canker, O. C. White,  
Olympia.

Growing Small Fruits, C. J. Stuart,  
Monroe.

Discussion, Henry Huff, Sumner.  
Address—Hon. Ernest Lister, Gov-  
ernor.

Standardization of Fruit Products,  
C. A. Tonneson, Editor Northwest  
Horticulturist, Tacoma.

Between the Producer and the  
Consumer, J. B. Powles, Seattle.

The Horticultural Outlook, Prof. W.  
S. Thornber, Pullman.

Evening Session—8:00 O'clock.

Under the auspices of the Univer-  
sity Club of Olympia. Speaker of the  
evening, Dr. E. O. Holland, President  
State College of Washington, Pull-  
man.

Friday, February 12—9:30 A. M.  
Orcharding with Dwarf Trees, A. S.  
Caton, Olympia.

Pollination, T. O. Morrison, Asst.  
Commissioner of Horticulture, Olym-  
pia.

Scientific Liming of Soils, Henry  
Bucey, Tacoma.

Genius of Mountains, Forests, Wa-  
ters, S. J. Harmeling, Vashon.

How Shortage of Potash Can Be  
Met, E. B. Stockey, Agriculturist W.



W. Exp. Station, Puyallup.  
**Afternoon Session—1:30 O'clock**  
 Marketing and Co-operating, W. H. Paulhamus, Puyallup.  
 Scabby Fruit, J. L. Stahl, Horticulturist, Puyallup.  
 Nuts, A. A. Quarnberg, Vancouver, Wash.  
 Poultry and Fruit, Mrs. George Shoup, Puyallup.  
 Election of Officers.  
 Reports of Special Committees.  
 Selection of next place of meeting.  
 Unfinished Business.  
 Adjournment.

### NUT TREES ON PUBLIC HIGHWAYS

People in this country, living as we do under different surroundings and environments than do the Europeans, act differently and live differently, and generally in a way that we find most suitable.

The common people of Europe, live not always as they would like to, but as they have to in a great many cases. We have more room, more freedom and enjoy more liberties than they ever have any thought of enjoying.

Here is the idea I wish to emphasize, why not practice thrift right now and not wait till we are compelled to. Not an inch of ground is wasted in the nations of Western Europe, every available means is used to get the maximum returns per acre. They believe in natural beauty as much as we do, and they park their highways with shade trees, and every city has its park or City Garden which they are very proud of.

In the nut-bearing regions, they take advantage of this and plant nut trees of different sorts, and besides the shade a bounteous crop is produced every year. Reaping these harvests is one way they have in helping the poor, giving them nuts or food for their labor.

They have not much space to be given up to roads and highways, and even tho the roads may be narrow, they are always kept up in perfect condition. The nut trees, mostly Walnuts, are planted about sixty to seventy-five feet apart alternately on each side of the road. This is a wonderful sight to behold and a profitable luxury as well. Some one may say, "How can we protect these trees from harm and from thieves who steal nuts?" How do we keep anything from being stolen? If the laws are properly enforced, no one need have any fear from such cause.

Since this country is becoming deforested quite rapidly, we should take it upon our selves to replenish the plantings as much as possible. Trees when grown to some size serve as wind-breaks and it is thought affect the general weather conditions in a more or less degree, helping to keep a more even temperature.

I would like to have every home-maker consider this seriously and look about in your own locality and see what can be done. Couldn't you start the ball rolling by planting some, along one side or around the entire place? Think about it.

C. B. LEWIS,  
 Russellville, Ore.

### EVAPORATING APPLES AND PRUNES.

The cost of evaporating apples is about 2 1/4 cents per pound for the evaporated product. It took 2,063 pounds of Arkansas Black, or Ben Davis to make 228 pounds, or 9 to 1, of dried product according to C. C.

Vincent of the experiment station, at the University, Moscow, Idaho.

The Idaho prune growers are contemplating the sale of their product dried, figuring to contract their crops at \$15 to \$17.50 per ton. Prunes have been a paying crop in Idaho, but it takes considerable fertility from the soil.

### PEARS ON COMMERCIAL SCALE.

Mr. Robert B. Miller, proprietor of the Startup Pear Orchard Company, Startup, Washington, has now 60 acres in pears of the following varieties: Bartletts, Bosc, Anjou, B'd Jersey, Comice and Duchess de Bordeaux. The trees have been out from two to five years. A small crop is expected this year. Mr. Miller will endeavor to reach the Eastern markets with the Anjous, Comice and Bosc. The other varieties may have to be canned or evaporated. But Mr. Miller is prepared and determined to give commercial pear growing in the Coast section of Washington a very thorough test, benefiting by the experiences of all fruit growers in this part of the state who have been more or less successful, and at the same time the most modern scientific methods are being employed. Mr. Miller is president of the Western Washington Horticultural Association.

### GRAVENSTEIN APPLE.

The famous Gravenstein apple which is so well adapted to the Coast section and generally regarded as the best all around apple both for the local and the commercial market is now said to be a native of Denmark. It originated at the Danish castle of Graasten, in Schleiswig, which was owned by a Danish count who brought the seeds from abroad. In 1864, when the Germans took Schleiswig, they also took the castle and the name was changed. The Pacific Coast section has possibilities of producing Gravensteins second to none, and with cold storage facilities, it is likely to enter into commerce quite extensively.

### RINDERPEST IN CHINA.

Rinderpest has destroyed some valuable dairy stock in China according to a letter received recently from Horan W. Houlding, who is conducting the South Chih-li Mission at Tamingfu Chih-li, North China. An effective prevention seems to be a riderpest virus with which cattle are inoculated. In districts where the disease is prevalent healthy cattle are inoculated with an infection of the blood taken from the veins of a calf or cow in the height of the disease. Simultaneously an injection is made of the protective serum. The treated animal becomes sick for a week or more, but in nearly every case recovers and is then immune.

Mr. Houlding, who publishes the "Barley Cake" is returning to Seattle, (2105 First Ave., W.) and will remain in this country for a short time.

### WALNUTS IN CLARKE COUNTY.

Mr. John M. Hoff, Sara, Clarke County, raised 1000 pounds of Franquette walnuts this season which matured in good condition.

The market value is about \$165 for the crop. The trees are 15 years old and planted about 40 feet apart, which admits of other crops to be grown between the tree rows.

## The Scandinavian American Bank

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Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

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### STRAWBERRY PLANTS

Marshall and Magoon, best varieties for Pacific Coast; strong, vigorous, being from new setting and at prices as low as good plants can be sold.

W. F. GOULD & SON

R. F. D. 3, Tacoma, Wash.

### Strawberries

Americus Everbearing strawberry plants. Delicious fruit from August up to freezing weather. One of the finest flavored and firmest berries known. \$1.50 per 100

F. I. Moffet Ellensburg, Wash.

### Rhododendrons

Native Shrubs, Plants and Flowers, collected from the forest. Send for Circular.

JOEL SHOMAKER

Nellita, Washington

### GIVEN TO SUBSCRIPTION HELPERS

**Blueberry (Huckleberry) Plants**—Foliage of blue and black varieties, bright glossy evergreens, valued for decorating as one of the best by florists, and one of the prettiest shrubs for lawn.  
**6 Native Well Rooted Plants**, 6 to 12 inches in best growing condition given for 1 new subscriber and 50 cents.

12 plants given for 2 new subscribers at 50 cents each.

**Oregon Grape**—6 well rooted plants given for 1 new subscriber or 12 plants for 2 new subscribers at 50 cents.

**6 Rhododendrons**—Well rooted native plants, 6 to 12 inches, given for 1 new subscriber.

12 of these given for 2 new subscribers at 50 cents each.

**6 Maidenhair Ferns** given for 1 new subscriber.

12 maidenhair ferns given for 2 new subscribers at 50 cents each.

**6 Spiraeas**—Native with fluffy white or cream flowers, with short crowns given for 1 new subscriber.

12 of these plants given for 2 new subscribers at 50 cents each.

**6 Ginger Plants**—Native, with blue flowers, fragrant leaves and roots given for 1 new subscriber and 50 cents, or 12 for 2 new subscribers at 50 cents each.

**6 Evergreens**—Either fir, cedar or hemlock seedlings, 6 to 12 inches, given for 1 new subscriber at 50 cents or 12 given for 2 new subscribers at 50 cents each.

These plants are carefully collected for us and will be shipped direct to our subscription helpers. There are no evergreens, which serve better for decorative purposes and for lawns than do these native shrubs, and this is a rare opportunity to get a start. For anyone to make a rip to get a supply is not only costly but it is difficult to obtain those which have such fibrous roots as to be in good condition for transplanting.

Send orders to the

**NORTHWEST HORTICULTURIST AND DAIRYMAN**  
 Box 1604, Tacoma, Wash.

**Politeness Returned**—A few days after a farmer had sold a pig to a neighbor, he chanced to pass his place and saw his little boy sitting on the edge of the pig-pen, watching its new occupant.

"How d'ye do, Johnny," said he. "How's your pig today?"

"Oh, pretty well, thank you," replied the boy. "How's all your folks?"—Harper's.

The planting of walnut trees alongside the highways is an excellent plan, and is being practiced to a considerable extent in this state and county. The trees are set about 40 feet apart on the roadways. Dig deep holes but not necessarily large

## VETCH SEED

Fancy New Crop Vetch Seed Direct at Wholesale Rate.

Special Prices on Ton Lots

### Fancy Red Clover Seed

New crop, Oregon grown, the finest in the world, now ready for market. Write for prices. All our seeds guaranteed to comply with all the state seed laws. Also a complete stock of grass seeds, clovers, seed grain, etc. Send us a list of what you want now and get our prices.

## D. A. White & Co.

SEEDMEN

Salem, Oregon

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**WAIT!** Get my 1916 price! Don't buy an engine of any make or kind or price until you first get my low 1916 prices and easy buying plans, including terms. I build these Masterpiece engines in my great chain of factories and sell them direct to farm and shop with only one small profit added to actual cost. My New 1916 280-Page Book illustrates and describes all sizes from 1 1/4 H. P. light work engines to 18

H. P. moguls for biggest, toughest, heaviest jobs. All Galloway Masterpiece engines are large, long stroke, heavy weight and low speed. Built for lifetime service and satisfaction. 1916 improvements include valves in the head, extra cooling surface, perfected oiling system, economy carburetor, built-in magneto, and Hercules water-cooled cylinder head. These features and many others make Masterpiece engines power kings in every field. Shipped from Waterloo, Council Bluffs, Kansas City, St. Paul and Chicago. Ask for my special proposition and new book today. A postal gets it. I'll pay the postage.  
**WM. GALLOWAY CO., Box 2125 Waterloo, Iowa**

### WILLSON'S WONDER WALNUT

*Natural Size.*

**Earliest-Heaviest Bearer**

**Blight Resistant**

**Blooms Late**

**Sweetest-Best**

Attracted the greatest attention of anything in this horticultural line at P. P. I. E. Write for illustrated circular, with prices, to the originator, **F. C. Willson, Proprietor of Encinal Nurseries, Sunnyvale, Santa Clara County, Calif.**

The Best Way to Find Out

ones, blast if necessary. These is good profit in walnuts for those who will give the proper care and atten-



tion, is the opinion of A. J. Galloway, Healdsburg, Calif.

### INJURED TREES.

The month of January brought deep snow and in some cases sleet which destroyed the tops of many valuable orchard trees. This is rather severe pruning and the best that can be done is to remove the large broken parts, then prune so the trees will grow a new top symmetrically. In many cases it will take a couple of years to get the new bearing top, but unless with extreme cases it can be done, and sometimes for the making of a better tree.

### HOMEMADE BORDEAUX MIXTURE.

Ingredient: Copper sulphate, 4 lbs.; quicklime, 4 lbs.; water to make 50 gallons.

Prepare the copper sulphate by suspending it in a gunny sack just below the surface of several gallons of water in a clean barrel. When the sulphate is dissolved, which requires three or four hours, remove the sack and stir into the barrel enough additional water to make exactly 25 gallons of the copper solution.

Prepare the lime by slaking it slowly and thoroughly in a clean barrel, strain, and add enough additional water to make exactly 25 gallons of lime milk. Stir thoroughly.

Pour the two ingredients together into another barrel, or better, directly into the spray tank, if it will hold 50 gallons. It is highly important to stir the mixture very thoroughly and to strain both ingredients before they are combined, as otherwise clogging of the spray nozzles might result. Use a copper or bronze wire strainer of 18 meshes to the inch. Do not put copper sulphate or Bordeaux mixture into tin or iron vessels; use wood or copper containers. Mix the Bordeaux as needed and apply at once. It is never so good after it has settled.

### Stock Solutions.

Everyone who uses Bordeaux mixture frequently and in quantity will find it convenient to keep concentrated stock solutions on hand, as these keep indefinitely if the water which evaporates is replaced.

Build an elevated platform to hold the barrels. Suspend 50 pounds of copper sulphate to dissolve in a 50-gallon barrel of water. Slake 50 lbs. of lime in another barrel. Add water to make 50 gallons of lime milk. When Bordeaux mixture is needed stir both stock barrels and take from each as many gallons as the formula calls for in pounds. Dilute the copper sulphate in one barrel and the lime milk in another, each with half the water, and let the two run together into the strainer of the spray tank.

## GREAT SPECIAL OFFER!

Use a Litchfield Manure Spreader  
One Year Before You Pay a Cent!!

**Write Today!**



**Write Today!**

**The King of Low-Down Spreaders**

**Made in Three Sizes**

Never was such an offer made before! It is proof of our confidence in the Litchfield. Earn the price of a Litchfield Spreader many times over by increased crops, before you advance one cent. We'll distribute 1000 spreaders on this basis.

## Write Today for Particulars!

Look at the pictures below! It shows what YOU can do by spreading the manure now going to waste on your farm. **WRITE TODAY—AT ONCE—FOR PARTICULARS ON THIS EXTRAORDINARY OFFER.**

Oldest and Largest  
Independent Wholesalers of  
Farm Machinery in  
The Pacific Northwest

**R. M. WADE & CO.**  
SINCE 1855  
PORTLAND, ORE.

Warehouse and Main Office  
occupies entire block  
333 HAWTHORNE AVE.



**A LITCHFIELD CROP**      **NO LITCHFIELD—NO CROP**  
Actual photograph taken on farm of P. B. Marshall, Albany, Oregon, showing two fields—one where a Litchfield Manure Spreader was used, and one without.

## AGRICULTURE

## The Basis of Prosperity

### Forage Crops; Adams County

In the report of his work as Agriculturist for Adams County, Washington, Mr. Roy Adams states that the forage crop problem is being satisfactorily solved. Wheat growing of course is the leading money making crop and some of the prominent farmers now working for a high standard of purity.

#### Alfalfa.

The following farmers were induced to plant dry land alfalfa in the spring of 1914: J. M. Griffith, Will Horn, P. L. Nissen, Jake Luitep, L. O. Dana, Adam Kammers, Snyder Mercantile Co., A. M. Gillis, D. A. Scott, and a number of others. The alfalfa in the main was planted in rows from 30 to 36 inches apart and planted thin in the rows. In nearly every case a good stand was secured and a good crop resulted.

Last year, 1915, Adam Pfugrath, O. W. Goodenough, Carl M. Olson, John Holsey, Fred Wahl and S. D. Truitt had satisfactory results from their dry alfalfa trials. C. S. Bennett planted 18 acres which was a failure owing to ground squirrels and an excessive growth of weeds.

#### Sweet Clover.

In the trials of sweet clover very good results have been obtained both last season and this. C. S. Bennett, Dan Krehbiel, J. J. Collier, and P. L. Nissen had tracts devoted to sweet clover in 1914. These proved equally as good as alfalfa the first year and at least three times better the second or last year. Last spring additional tracts were planted to sweet clover by S. D. Truitt, and J. J. Kanzler.

#### Field Peas.

Henry Rosenoff, Will Horn and J. M.

Griffith all planted acre tracts to field peas in the spring of 1914. Last spring, 1915, S. D. Truitt, C. H. B. Carlson, E. J. Beckley, Henry Rosenoff, H. M. Fahler, and E. J. Davenport planted field peas and good reports have come from all the plantings. The peas were used for both hog pasture and grain. Mr. Truitt harvested 12 sacks of peas from one acre on high ground.

#### Sudan Grass.

Sudan Grass was first grown in Adams County by H. Miller and A. S. Newland, during 1914, and seemed to show promise of a very profitable crop. Last season, 1915, H. Hiller, S. D. Truitt, J. C. Carlson, and many others had tracts of Sudan Grass but in the main it was disappointing owing to the cold spring and early summer rains. Sudan Grass is not considered as profitable a crop as either sweet clover or peas, for this section.

#### Rye.

Fall rye is grown by practically all the farmers of the County and is used for pasture during the late fall and early spring. It is also cut for both hay and grain. This season C. S. Bennett filled a 45 ton silo from 2½ acres and is feeding it to his milk cows this winter with very good results. He considers rye a very valuable crop to grow.

#### Better Seed Grain.

Adams County farmers are fortunate in that their wheat when it comes from the thresher is free from all mixtures so common to many wheat growing sections. The weed

### CROWN SILOS AND TANKS

While They Last at

## BARGAIN PRICES

Only a few left. We are quitting this line.

Hoops and Lugs, Door Hinges and Latches sold separately. Anything from a washer to a complete silo. Material of the very best. If intending to build a house or barn, please let us quote you price on lumber delivered in car loads.

### Holland=Cook Mfg. Co.

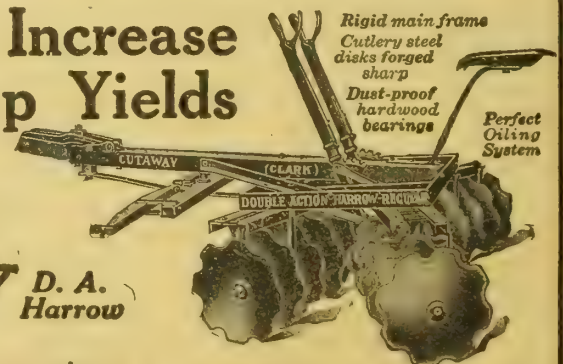
Fern Hill Station

TACOMA, WASH.

## You Can Increase Your Crop Yields

Regardless of conditions your yields will be larger if you use a

**Cutaway (CLARK) D. A. Harrow**



No other disk harrow of any make or style approaches the CUTAWAY (CLARK) Double Action for pulverizing the soil, for saving time or for saving horses. The rear disks *always* cut just midway between where the fore disks cut. Every inch of the soil is pulverized and aerated. With the CUTAWAY (CLARK) Double Action Harrow you can save

25 to 33½% in time. Compared with any single harrow it does 50% more work with the same horse power. It is made in sizes to meet the needs of every farmer. The disks are of a special steel rolled to our own analysis and forged sharp. The bearings are dust-proof oil-soaked hardwood, perfectly lubricated.

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NAME \_\_\_\_\_

P. O. \_\_\_\_\_

seeds that are found are very small, tumbing mustard and Russian thistle, which are cleaned out very readily by and ordinary fanning mill.

The wheat grown here is of very high quality, the berry being unusually developed and carrying a high percentage of gluten. But the far-



One Hundred and Forty Thousand Tons  
of Well-Preserved Ensilage Are Being Fed  
to Forty Thousand Head of Stock  
This Winter



THE WIND-PROOF SILO

THE AIR-TIGHT SILO

Your neighbor, perhaps, has one. Some one of your friends surely has. He believes in PREPAREDNESS—for prosperity—against drouth and crop loss. Ask him why he bought the old reliable WEYERHAEUSER SILO—perhaps he experimented first with some makeshift, or maybe just because he had confidence in the silo and its makers, but anyhow he will tell you that he made no mistake.

## WEYERHAEUSER SILOS

have stood the test of time for several very  
good reasons, among which we  
emphasize the following:

The staves are of AIR-DRIED CLEAR DOUGLAS FIR lumber, wind-seasoned many months. You cannot have perfectly air-tight construction with green or kiln-dried lumber.

The doors swing easily on hinges, balance perfectly and do not stick or freeze up. They can be locked tight.

Our 1916 Sectional roof, applied with a wrench, is water-tight and self-adjusting. It is completely built at the factory. There is a dormer window and a gin-pole for filling. A complete silo chute furnished if you wish.

Owing to the moisture within the silo and rain without, the drying heat of the sun and cold of winter, every kind of a silo, whether built of perpendicular or horizontal staves, hollow tile or concrete, expands and contracts. It is a fact that vertical stave silos afford the easiest method of adjustment, and with our improved fittings only one adjustment a year is necessary and requires less than one hour's time. The air-tight construction which these adjustments involve means perfect ensilage for all time.

The anchorage system is scientifically designed.

## ASK FOR CATALOG

### Our Silos Are Shipped Complete with roof and chute if desired.

The metal fittings, such as guy lines, base anchors, hoops, lugs, hinges, latches and roof adjustments are not only necessary on any silo, but they are thoroughly tested and guaranteed by us. Do not let anyone tell you that these "new fangled fixings" are unnecessary. We are lumber manufacturers and certainly would not furnish them if not needed.

Our prices for the best grade silo are often less than the "home-made" or any other style.

### How to Save Money

Speaking of prices, we offer the suggestion that you reserve a Weyerhaeuser Silo at once and protect yourself against any and many possible advances in the price of lumber and metal because of the war or other conditions.

If you will write now, today, direct to the home office or any representative: "I may want a silo some time before August 1, 1916. Please hold one (or two) for me at the present price. I reserve the right to take it or not as conditions develop during my crop growing season," the Weyerhaeuser Lumber Company pledges itself to hold it for you until the above date, although the price of lumber may advance 50 per cent or more. We shall stand by our offer.

## Get in Touch With Any of the Following Agents in Your State

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SNOHOMISH COUNTY AND SNOQUALMIE VALLEY IN KING COUNTY:  
Robert Burt, Superintendent of Agencies, 1730 Magnolia Blvd., Seattle.  
W. S. Jewett, Stanwood.

WHATCOM COUNTY:  
Edgar A. Rowell, 102 Prospect St., Bellingham

KING COUNTY, (Except Snoqualmie Valley), KITSAP, PIERCE, THURSTON, JEFFERSON, CLALLAM and MASON COUNTIES:  
C. J. Zintheo, 2105 31st Ave. So., Seattle.

SKAGIT, SAN JUAN and ISLAND COUNTIES:  
Chas. E. Peek, 2212 Hoyt Ave., Everett.

LEWIS, CHEHALIS, GRAYS HARBOR, PACIFIC, COWLITZ, CLARKE and WAHIAKUM COUNTIES:

John H. Giblin, Chehalis.

YAKIMA and BENTON COUNTIES:  
St. Paul & Tacoma Lumber Co., 18 yards.

PALOUSE COUNTY:  
Standard Lumber Company, 25 Yards.

MISCELLANEOUS:  
City Lumber & Coal Co., Dayton.  
Williams Olinger Lumber Co., Walla Walla.  
Stevens Lumber Company, 4 yards, Douglas County.

### OREGON

Booth Kelly Lumber Company, Eugene.  
Royer Implement Company, 208 Front St., Portland.

### IDAHO

Standard Lumber Company, Moscow.  
Ramey Lumber Company, Nez Perce.  
O. P. Hendershot, Boise.  
Consolidated Wagon & Machine Company, Twin Falls and Idaho Falls.

# Weyerhaeuser Lumber Company

EVERETT, WASHINGTON



mers have lost sight of the importance of keeping their grains pure to type and at present there is not a farmer growing grain of known purity.

With the idea of stimulating the practice of producing pure grain for seed purposes an organization of five farmers has been consummated, composed of Fred Siegel, W. S. Decker, L. E. Haight, Ed. Stolp and Karl L. Wellsandt. These men will, on the start, grow small tracts of grain of known purity and gradually work their entire farms into pure grain. Where combines are used it is also intended to go thru a field one or two swaths wide and pull out by hand all the off varieties of grain. In this way a farmer can save large enough quantity to seed his entire farm the second year. This line of work will be spread as rapidly as the farmers can be induced to take it up.

#### COST OF RAISING HEIFERS.

According to the Wooster, Ohio, Experiment Station, it Pays to Raise Only the Dairy Heifers Which are Good Prospective Future Dairy Cows.

In a Wisconsin dairy herd the estimate cost of raising 117 calves to two years of age was \$61.41, counting value of calf at birth at \$7.04, feed, \$40.83; labor, \$7.81, and other items of expense, \$13.73. The fertilizer was given a credit value of \$8 or a little more than the equivalent of labor.

At the Storrs Connecticut Station the net cost of the two year old heifer was figured at \$66.

Calves born during the last half of the year costs less to bring to 2 years of age than do those born in spring.

While the calf receives ten or more pounds of milk, there is no need of feeding grains high in protein, such as, linseed meal, linseed oil meal, gluten feed, etc. Sufficient protein is supplied in the milk. As soon as the milk is decreased, some such grain should be added to the ration; but cotton-seed meal should not be used before the calf is six months of age, because in many cases serious results have followed its use. If feeding corn or oats or both when ready to reduce the milk, add about .1 pound linseed oil meal or .25 pound of bran for each pound (pint) of milk removed; or better, use one-half as much of each.

#### Silage.

When calves are 4 to 6 weeks of age, it is usually safe to begin feeding silage in small quantities. Begin with a small handful per day and note the results. If indigestion appears, discontinue for a time. If all goes well, increase the amount very gradually. After the calf is two months of age, it may be fed silage quite liberally; but one should not attempt at any time to compel a calf to depend largely on silage after the milk has been discontinued. It is not a good feed to be used alone for any kind of cattle. It should be used with hay or grain high in protein.

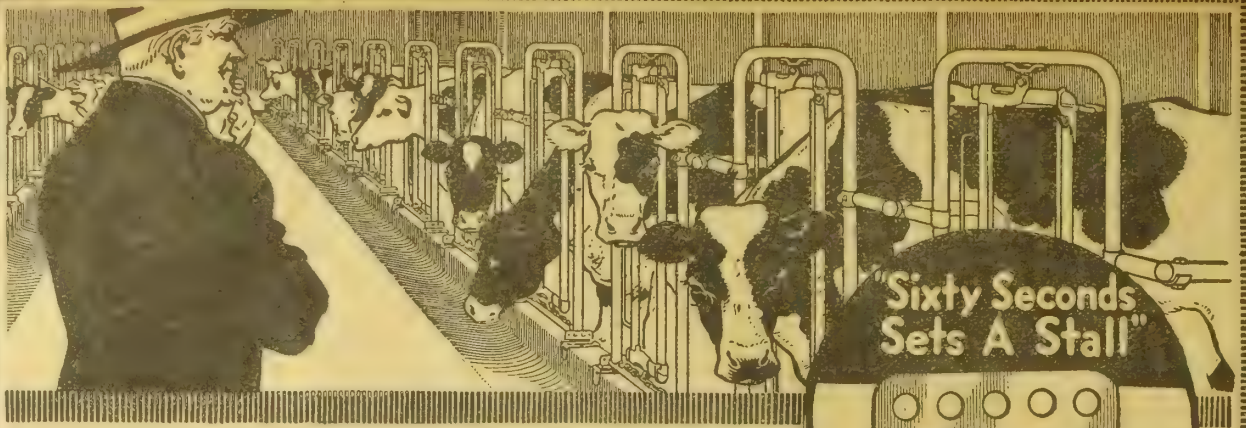
#### Pasture.

It is not best to have small calves under two months of age on fresh green pasture in the spring. This is frequently the cause of indigestion, indicated by scouring. After they are three months of age, there is no better place for them than on good pasture. The very young calf had better be kept in a dry lot or on pasture which is so short that it can not get enough to cause trouble.

Fall calves usually make the largest yearlings at the least cost, because they are ready to go to pasture in the spring and make good use of it during the summer. At the prices commonly used, pasture is about the cheapest feed. Shade should be provided to protect calves in very hot weather.

#### Water.

After calves are one month of age they should have access to pure



## What's Your Herd Worth?

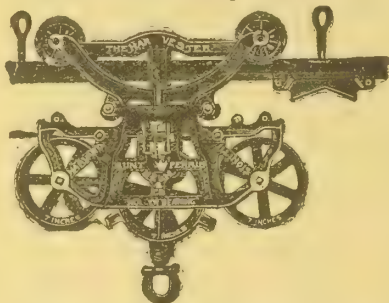
**T**HE worth of your herd is based on the **profit** it makes for you. Is that a fair statement? All right. If you can **permanently** increase your earnings without enlarging your herd, isn't that just about the best place in the world to invest a little money? You **can** do that very thing. STAR BARN EQUIPMENT leads the way to a healthier herd—cows that give **more** milk—and **better** milk—and all with about half the labor it now takes. We can prove every word of these statements.

The reasons why you'll buy STAR BARN EQUIPMENT in preference to other kinds lie in its patented features—exclusive with our make—found in no other.

## STAR Steel Stalls. Stanchions and Litter Carriers

The STAR STEEL STALL is built and sold on the Unit System—it is assembled in our factory, not your barn. Alignment Device simplest and most efficient ever made—the Star Curb Clamp enables you to set a stall arch or remove it in sixty seconds and the Arched Construction does away with useless castings and dirt catchers as well as insuring maximum strength. The GIANT STAR STANCHION is wood-lined and adjusts to fit all size necks—has the quiet Double Chain Hanging and One Hand Lock—is adjustable and by far the strongest stanchion made. STAR LITTER CARRIERS are Roller Bearing with Double Lock Tubs. Modern to the last degree. Get our literature. It tells the whole story.

#### Harvester Hay Carrier



Biggest in size and value. Roller Bearing and built for heavy duty. Ask your dealer or write us for details.

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In writing state whether interested in Stalls, Stanchions, Litter Carriers, Hay Tools.

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DAIRY MACHINERY COMPANY, AGENTS, SEATTLE, WASH.

water. This is very essential before as well as after the milk is discontinued. The water supplied should not be too cold and should be slightly warmed in winter. Where a minimum amount of milk is fed or where calves are raised on substitutes for milk, the amount of water should be limited, to young calves, because under such circumstances they frequently drink too much. Apparently this is an attempt by nature to make up for the shortage of milk.

It is well to supply the calf with a little salt. This is more important after the milk is discontinued. Milk contains the various minerals in sufficient quantities for the very young calf; hence, the salt is not so essential while plenty of milk is fed.

It is best to avoid any sudden radical changes in the ration. Make changes gradually and watch the calf closely. Dairy calves need not be kept fat but should be kept in good growing condition. A daily gain in weight of .8 to 1 pound for Jersey and Guernsey and of 1 to 1.4 pounds for Holstein-Friesian calves is about what may be expected under fairly good feeding and care. Greater gains may be obtained by more liberal feeding.

#### TILE TRAP FOR RABBITS.

An inexpensive and permanent sewer tile trap for cottontail rabbits, which has proved very effective in Kansas, is described in Farmers' Bulletin 702, "Cottontail Rabbits in Relation to Trees and Farm Crops." Details of this trap were supplied by Mr. J. M. Walmsley, who has used it successfully on his and other farms in that State. This bulletin may be obtained from the U. S. Department of Agriculture, Washington, D. C.

#### LIMING CLOVER FIELDS.

Lime helps to destroy the toxins or poisons which have developed in the soil, it releases or unlocks plant-food, it overcomes any acid conditions which may exist and in doing so provides favorable conditions for those germs in the soil which are necessary to the success of clover.

Farmers have long known that lime promotes the thrifty growth of clover, but perhaps have not gener-

ally been aware of the reasons. Scientists say it is chiefly because lime sweetens the soil, unlocks the stored-up plant-food, increases the water holding capacity and finally provides a suitable home for the needed bacteria.

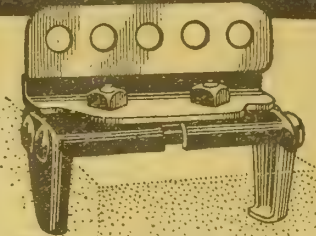
On soils well supplied with lime the crops are vigorous and less subject to any danger from frosts, and resist well, either drouth or extreme cold. Liberal applications of lime therefore is sure to increase the tonnage of any of the legumes, besides the crop grown has a greater feeding value than when grown on soils deficient in lime.

The ground limestone seems to be the cheapest and most satisfactory form in which to apply on clover lands.

#### SILOS MOVING LIVELY.

An order for 147 complete silos with roof and silage chute for each

"Sixty Seconds Sets A Stall"



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(PATENTED)

**Y**OU can now finish your curb with the rest of your concrete work without using templates or anchors.

The new Star Curb Clamp sets the stall where you want it without fuss or bother. "Sixty seconds sets a stall" firm as a rock. In the same length of time you can remove it.

This is a revolution in time saving and an extra insurance of properly set stalls. On all STAR STALLS as regular equipment. Exclusive with us.



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—a 159 page, profusely illustrated book of valuable barn data. If you write, mentioning the number of cows you keep, whether you intend to build or remodel your barn and when. Also mention what you are interested in, Litter Carriers, Hay Tools, Barn Door Hangers, and we will include catalog of same.



to be erected on farms in North Dakota was received by the Weyerhaeuser Lumber Co., Everett, Washington, recently.

This is without doubt the largest order for silos sent to the Pacific Northwest in one day.

Orders for 6 complete silos for points in Australia were also received, following a shipment of 7 last fall.

Orders for silos are also being placed by farmers all over Western Washington, showing that the recent heavy snow is a convincing argument for preparedness to keep the dairy herd comfortably fed and in a good flow of milk by means of good crops and the silo.

silage, roughage, or bedding, of stuff that is wasted on the average farm. Weeds and weed seeds, usually counted worse than nothing, may be put on the right side of the ledger by means of a few sheep.

## Making Farms Pay

### Cashing-in for Rural Comforts.

The assistant secretary of Agriculture, Carl Vrooman, has given some valuable and timely suggestions in Farmers Bulletin 704, on how to make the farm pay higher dividends in cash and in comforts.

### The Farm-Civilization's Unit.

The farm is vastly more than a business enterprise; it is a home, a social and civic center—the most important unit of civilization. The success of a farm home is based on the success of the farm business. What farmers need most to know is how to make the science of agriculture boost the business of farming.

### Robbing or Saving the Soil.

"The farmer who robs his soil is sawing off the limb upon which he is sitting. Your deed calls for the subsoil as well as the surface soil and the subsoil is a mine of fertility and a well of water if properly utilized.

"Lime is the one thing most needed by the average run-down soil. Phosphorus, next to lime, is the mineral plant food probably most needed by the average unproductive soil. Manure as regularly as you harvest. Stable manure is the best form of fertilizer. Where stable manure is not available, green manure must be used.

"Proper tillage becomes more important as the farm grows older until on 'worn out' farms it is a factor of chief importance. Tillage gives the crop more soil surface on which to feed without increasing your taxes, make existing plant food more available, gives air to the roots, regulate water supply and kills weeds. Where the land lacks natural drainage, everything else depends on how thoroughly the soil is ditched or tilled.

### Humus and Legumes

"Humus is the stuff with which nature fertilizes uncultivated soil. Plow under all stable manure, straw, cornstalks, stubble, leaves, weeds and green-manure crops.

"Remember there is a legume crop for almost every soil. The productivity of a farm is not kept up on a permanent basis unless annually at least one-fourth of that farm is made to grow legumes, all of which except the seed is plowed under as stable manure or green manure. Do not, unless under exceptional circumstances, grow corn in the same field more than two years in succession. Feed as much of your grain as possible to live stock on the farm.

### Live Stock.

"When you break even on your beeves you are ahead of the game provided you save the manure. 'Saving the manure' doesn't mean saving merely one-third or one-fourth. It means saving 70 per cent or more, liquid as well as solid. The problem of keeping livestock with profit is largely a matter of making use as

Seed Selection and Wages.

"Catch but one bad ear in testing seed corn and you save a good day's wages. Find the average number of bad ones and you save a week's wages in a winter's afternoon. Buying seed is a business proposition—not an exercise of faith.

### Side Lines and Women Folk.

"As long as the average farmer 'keeps his garden on the grocery shelf,' he sells everything wholesale and buys everything retail. Side lines such as canning, preserving, making apple butter, are profitable where the farmer is wise enough to see that the women of his household get all necessary help with their work.

"The price difference between ham, lard and bacon and hog on the hoof shows the money gain for farm butchering and smoking.

### Making Capital "Available."

"Keep accounts—find just where your money comes from and just where it goes. Some men's wealth is like a good deal of the fertility in their soil—it is not 'available.' If the boys and girls are to be kept on the farm, the farm must be made not only a financial and economic success, but also a family and civic success. Any reasonable expenditure for making the home place more attractive is as real and profitable an investment as though the money had been spent for limestone and phosphate.

### Preparedness—Marketing and Cooperation.

"Preparedness is as important for the farmer as it is for the soldier. The farmer who wastes his leisure time and who fails to utilize rainy days and slack seasons to get his affairs in shape can never hope to catch up during the busy seasons.

"It is not enough to grow a good crop, or even to grow a good crop at low cost. To make a big crop a business success it must be disposed of as efficiently as it is grown—must be so graded and packed as to meet market standards and so marketed as to bring the farmer the highest current price.

The farmer who is too suspicious to get together with his neighbors in order to do co-operatively what no one can do alone is sure to pay dearly for his incapacity for team work."

### SULPHUR FOR LEGUMINOUS PLANTS.

Experiments conducted at this station have led to the discovery that

## GROUND LIMESTONE

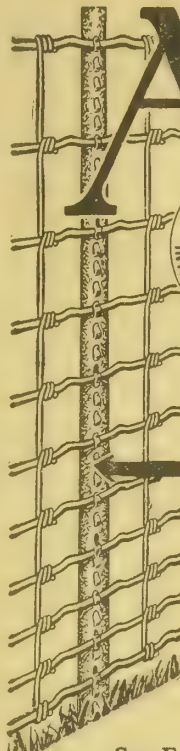
LARGER CROPS  
Increased Fertility

More lime is being spread on the soils of the Coast section this spring season than ever before. We have made the price so low that farmers feel they can use it liberally. Write us for price on car lots delivered at your station. For smaller quantity write for name of nearest distributor.

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**Sent Free** Write for booklet on how to set posts and erect fence. Every farmer should have it.

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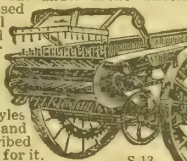
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My new, 1916 low prices and selling plans, cash or time, are fully described in my new 250-page book. Do not buy a spreader of any make or kind until you get this book. Ask for my special proposition on spreaders from now until seeding time, which ought to sell 25,000 machines. My new model spreader with all steel beater, all steel V-rake, low down, light draft, double chain drive, cut under front wheels, channel steel frame, trussed like a steel bridge, steel tongue, endless apron and force feed makes a finer and wider spreading machine than ever. Shipped from Waterloo, Kansas City, St. Paul, Council Bluffs and Chicago. All styles and sizes of spreaders and spreader boxes fully described in this big, new book. Ask for it.

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sulphur is a very valuable fertilizer for alfalfa, says F. C. Reimer, superintendent of the Southern Oregon Experiment Station. The experiments indicate that it is probably the sulfur in the superphosphate which is responsible for the large increase in yield where this material is used. If future results prove this conclusively, then it will be possible to reduce the cost of our alfalfa fertilizer bill just 75%; for sulphur in the form of crude ground sulphur may be purchased for one-fourth what it would cost in the form of superphosphate. This explains satisfactorily for the first time the valuable results which have been obtained from the use of



### WE ARE GROWERS OF THE WALNUT FROM THE UTILITY STAND-POINT.

In our own thirty-five acre orchard of grafted Franquette and San Jose Mayette's, on the Black California root, we have proven our own faith in the utility and profitableness of the French varieties.

If you have the location and soil, what can you plant with a more promising future?

Our own trees from our own scions. If you are interested, write us.

**RUEHL-WHEELER NURSERY,**  
San Jose, Cal.

gypsum and iron sulphate as fertilizers on alfalfa and clovers. These materials are rich in sulphur.

## Profit in Peas

By W. H. Kaufman, Bellingham, Wash.

During the past few weeks I have received many letters inquiring whether there was profit in peas. Not

being able to spare time to answer the scores of letters separately, I will answer them all at once through the Horticulturist and Dairyman.

Yes, there is good profit in peas for the man who raises good peas



every year. The kind of pea is really a secondary matter; but whatever kind they are they must be reasonably pure; not mouldy, free from foreign substances like sticks, oats, gravel.

#### Know Your Farm.

Before passing to the vital matters, let us emphasize the fact that certain sorts of peas do best on certain kinds of soil. We are just beginning to learn the tastes of peas and do not know as much as we would like; but in a general way long vines do best on dry, sandy soils; while short vines do best on moist clay soils. On the heavy clay of my alder bottom, my Blue Bells have yielded 75 bushels per acre, much more than Golden Vine. But on a sandy ridge the Golden Vine will outyield the Blue Bell.

#### Raise Only One Color.

It is next to impossible to keep peas from mixing, even when only one kind is raised on the farm. Where two or more kinds are raised the trouble is greatly increased. Therefore I raise only blue peas; the short vined, heavy yielding Blue Bells on the heavy, rich, moist clay bottom, and the long vined Blue Imperials on the lighter soils.

The Blue Bell and the Blue Imperial look exactly alike to an "outsider," although to a pea grower they are quite different. When I pass from one sort to the other at threshing time I save out several sacks, telling the grocer not to sell them for seed, but only for soups, as they are mixed. Thus I am able to keep the two sorts separate and pure.

If I had blue peas and yellow peas I could not sell the mixed peas to the grocer for soup; but as both are equally good for soup, differing mainly in that one like a clay soil while the other likes a sandy soil, I have no trouble and no loss.

I do not know of any very short vined yellow pea, one that does exceptionally well on a clay soil, but the Golden Ving. Amragti and other similar peas do well where one's land is all light and so he needs only one kind.

#### Keep Your Seed Pure.

All seed should be pure bred—must be pure bred to get a fancy price. For several years I have received double the market price for my peas, having been offered \$80 per ton last fall when mixed peas were selling for \$35 to \$40.

#### Why not?

Do not thoroughbred pigs sell for more than scrubs? or thoroughbred calves and colts for more than mongrels?

When the threshing machine comes to my farm from a pea job, I run oats or barley through until it is well cleaned. If I have no grain to thresh, I get a few sacks of grain and run that through. Four or six sacks will clean a thresher pretty well—of weeds, too, as well as of peas. Then have the oats rolled hard and your neighbor's weed seed will do you no harm!

Next, I raise only one color of peas, and am careful to sell for culinary purposes all that might possibly be mixed.

I hand-pick my seed every year. This is quite a job the first year, if you have mixed seed, and nearly as bad the second year; for even nice looking peas, selected from a mixed lot, will cross breed—just as a nice lot of Jerseys, picked from a herd of

grades, will often breed back to the scrub dam or scrub sire.

But if you get good seed, or keep at it for three or four years you will get seed that is easy to pick over. I can hand-pick a ton of my peas in a day, getting out everything that is not true to grade. For this one needs a "sorter," a machine that greatly helps in sorting peas, but is not at all necessary where one has only a few sacks to sort.

Sorting is especially necessary for Blue Bells. These are a very short vined variety, so that other sorts grow on top of them, and multiply out of all proportion. A field of Blue Bells will greatly outyield a field of Kaisers, but as Kaisers are a much longer vined pea than the Blue Bell, when a Kaiser gets into a Blue Bell field it will grow on top of the little Blue Bells, get all the sunshine and so yield two or three times as much as a smothered vine of Blue Bells. So the only way is to get all other peas out before sowing.

#### Rogueing.

This is a technical term, meaning taking out the 'rogues.' That is, going through the field (or such part of the field as you mean to get your next year's seed from) and pulling all but the right sort of vines. Some vines will have broader or narrower leaves than the right sort. Other vines will be taller or shorter, or they will be of a different color.

This sounds like a great undertaking, but really it is not so bad. An acre of peas can be "rogued" in a short time. Often one has to pull cut mustard or some other weed, and then "rogueing" is a simple thing.

Then when the peas blossom one can "rogue" again by pulling out all that have a wrong colored blossom. By attending to these details for a few years one can get a good grade of peas.

#### Selecting for Heavy Yielding.

This, also, is a matter of years, rather than of great effort. After a year or two you will find that certain parts of the field yield your best peas. Before harvesting go carefully through these parts, selecting vines that have the largest and most numerous pods. Get a gallon or more and plant these selected peas in your kitchen garden, giving them plenty of cultivation, in a rich soil—also plenty of room. I have had them yield 300-fold, whereas a field yield of 20-fold is good (say 60 bushels from three bushels).

There are some 267 gallons in a ton of peas; so that with plenty of cultivation, plenty of room and a rich soil, a little over a gallon of seed may yield a ton of peas.

#### Average Crops.

"There is no average" as the boy said about his fish.

Peas seem to have a six or seven-year cycle, something like this:

1. A big price on account of short crop and some special conditions outside war, etc.

2. Then a lower price, but fairly good.

3-4. Off years. Large yields and large acreage combined.

5-6. "Hog feed." No market at all except for the very best. Many farmers get discouraged; fail to select clean seed; try merely to raise "hog feed"; price \$25 to \$30 for mixed peas.

7. No clean seed on the market, possibly also small acreage. Price of

**NOW IS THE TIME** to buy VETCH, CLOVER, TIMOTHY, ORCHARD GRASS, RYE GRASSES, FIELD PEAS, etc. We have a complete line of the best quality Field, Garden, and Flower Seeds. Also Fertilizers, Sprays and Sprayers. Send us your orders or inquiries and we will give you our best prices.

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## SEEDS

It is important that every seed planted has strong vitality and that the entire quantity used is pure. "Highest quality," our motto for more than a quarter century, has established absolute confidence. We offer this year very choice seeds of vetch, clover and other grasses, corn, kale, marrow cabbage—grain, field, and complete list of garden seeds. Our new catalogue, a practical guide, is sent free to those who send in their names at once.

**Poole's Seed and Implement Co.**  
1507 Pacific Ave. Tacoma, Wash.

pure peas goes up to \$120 to \$150 per ton.

#### Repeat.

Obviously the thing to do is to "stay in the game" right along, if your land is fitted for peas.

Keep your seed absolutely clean. You will always get \$40 to \$50 a ton—and sometimes \$150! I have been offered \$120 per ton for my peas. I got 57 bushels per acre. Fanning out about 12%, I had some 56.16 bushels worth \$3 per bushel, or \$150.48 per acre for the salable peas; \$1 a bushel, \$6.84 for the split peas; \$10 an acre for the straw and a government bulletin says \$19 for the nitrogen added to the soil through the pea roots; or \$196.32 per acre for the crop.

From this we must deduct the fertility taken out by the peas to get the real value of the crop.

Of course this does not happen every year; nor to every one who tickles the earth and scatters a few peas around.

The 1916 crop will command a good



## Agreed

Many leading gas-engine experts have recently declared that lubricating oil made from asphalt-base petroleum gives best results.

Pacific Coast motorists made the same discovery years ago. For the majority have been using Zerolene in preference to all other oils. They agree with the experts.

Zerolene is made from selected California petroleum— asphalt-base—under the unequalled refining facilities of the Standard Oil Company.

Next time you empty the crank case, refill with Zerolene.

**Standard Oil Company**  
(California)

**ZEROLENE**  
*the Standard Oil for Motor Cars*

## Seed Corn

Acclimated, for sale. I have grown corn and made silage the past four years with excellent results of the Golden Dent (Bloody Butcher) variety, which matures early.

Write for prices.

B. S. FRYAR,  
Sumner, Wash.

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"MAN IMMORTAL NOW," Swendborg's "Heaven and Hell," 400 pages, 15c postpaid. Pastor Landenberger, Windsor Place, St. Louis, Mo.



price, for the 1915 crop was very short, many peas have been shipped abroad for soup for soldiers, and there was very little pure seed to start with last fall.

1917, 1918 and 1919 will possibly be low prices for poor peas; then along about 1919-21 somewhere, there will be little pure seed and prices will soar.

Don't "plunge."

Sow your five or ten or twenty acres every year, and keep your seed absolutely pure. You will always have a market and every few years you will "strike oil."

A Poor Year to "Hog Off" Peas.

Among my many letters concerning pea growing I find a constantly recurring query as to the advisability of hogging off peas.

This is the worst possible year for hogging off peas.

Last year's crop in the East was very short, owing to dry, hot weather and the pea weevil which all conspired to make a very short crop.

Here in Washington peas that were not strictly first quality have been rather cheap for two years and so many farmers got careless about keeping their seed clean.

In Whatcom county there were not more than two carloads of really good seed; less than a car load of strictly fancy stock; where we usually have great quantities.

Naturally seed that is really good will be a fancy price this spring; and as the war is making an unprecedented demand for soup peas, the price will be high again next fall; for there is not enough really good seed in the country to make a fair crop.

Here are a few general directions for those who want to make \$150 an acre growing peas.

1. Raise only one kind. Only an experienced seedsman can raise several varieties without getting them mixed. Drilling; cutting; harvesting; threshing; handling and cleaning are all danger spots about getting seed mixed.

2. Blue Bells for soups; Canadian Yellows for cover crops; Kaiser for hay or ensilage are standard crops; and are profitable in the order named.

3. Handpick your seed every year. It takes but a day to handpick a ton of good seed; but if you let it go for a couple of years you will have only second grade stock, even after hand-picking. After eight or ten years handpicking you will begin to get "purebred" peas; that will grow true to type. In grains, as in live stock, the breeder is more important than the breed. There are "scrubs" in all breeds. A "good" thoroughbred hog



With its 264 to 1 leverage one man can pull any stump that can be pulled by any horse power machine. Owners report pulling from 50 to 100 stumps per day. Made of Krupp steel—weighs only 171 lbs.

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WALTER J. FITZPATRICK  
Box J 182 Fifth Street  
SAN FRANCISCO, CALIF.

or cow of any breed is better than a "scrubby" hog or cow of any breed. I repeat that there is far more in the breeder than in the breed, a truth that is often overlooked.

4. Don't change peas too often. Try different varieties till you get one suited to your soil; then stay by it and keep improving it by field selection of seed; or else by getting fresh seed every few years from someone who keeps improving his stock. To swing around the circle of Blue Bells, Blue Imperials, Canadian Yellows and Kaisers is just as foolish as to swing from Holstein to Jersey and then to Durham.

5. Don't "hog-off" peas this year. Mixed seed will be cheap. Pure seed will be dearer than for many years; but if you want to get big returns next fall drill in only thoroughbred peas.

6. Handpicked peas from a mixed lot will be better than sowing the mixed lot; but such seed will "revert" a great deal, just as one may select a lot of nice looking grade Jerseys only to find that many of the grade's calves will revert. Only years of painstaking care will produce either cows or peas that will breed true. This certainty of "breeding true" makes a thorough bred cow worth several times as much as a "scrub" that looks "just as good." The same is true of corn, or peas or any seed.

7. In a general way short vined peas do best on rich, moist, clay soils; long vined do best on light soils. There may be exceptions; but this rule is good for a starter. I have never known it to fail.

## Corn Yielding 148 Bushels Per Acre

### RECORD IN COAST SECTION UNSURPASSED FOR CORN SILAGE.

Mr. Ira J. Pearsall, of Enumclaw, Washington, has demonstrated in his 1915 corn crop that the Coast section of this state records the unrivalled yield of 148 1/100 bushels corn per acre, figured on the basis of 72 pounds ear corn to the bushel. The attest was made by H. R. Cates, Bureau of Plants, U. S. Department of Agriculture, and by Floyd W. Rader, Agriculturist of King County. The crop consisted of 12 acres of Pear-

sall's Favorite Ensilage corn, 5 acres Pearsall's Bloody Butcher and one-fifth acre pop corn. The high record yield was of the Pearsall's Favorite Ensilage variety, which is of reddish yellow color, a hybrid cross of Bloody Butcher and a sweet corn made by Mr. Pearsall about 10 years ago, and from which seed has been carefully selected in the fall every year since for vigor and early maturity until thoroughly acclimated and satisfactory as a producer. The stocks grow from 7 to 9 feet high, and most of them have two ears. The yield for ensilage was 17 68/100

## GROUND LIMESTONE

Thousands of farmers will apply ground limestone on their soils early this year. Price very reasonable.

We supply it in any quantity from 100 pounds to ton or car-load lots.

**Savage-Scofield Co.**

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Tacoma, Wash.

## SEED CORN

Pearsall's Favorite Ensilage Corn.  
Pearsall's Bloody Butcher.  
Pearsall's Forage Popcorn.  
Golden Bantam Sweet Corn.

Acclimated — 10th crop — well matured — perfectly dry. It will grow. Price 20 cents per pound f. o. b. Order early to insure supply.

**IRA J. PEARSALL**

Enumclaw, Wash.

## PEAR TREES

Best commercial varieties for Pacific Coast section, choice stock in 1 to 3 years of age and good grades.

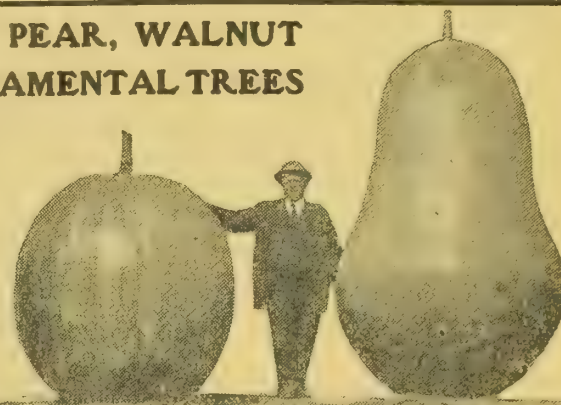
Also Plum and Prune trees of the leading marketable varieties. English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

**J. W. STEHENS**

Kelso, Wash.

## PLANT PEAR, WALNUT and ORNAMENTAL TREES



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**Quaker Nursery Trees are always "Best"**  
C. F. Lansing, Prop. Salem, Ore.

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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Good Agents Wanted.

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## Walnut Trees Franquette and San Jose Mayette

Grafted on California Black Walnut roots our specialty. Sizes 4 to 10 feet. Prices reasonable. We grow our own trees. Scions selected from our walnut grove. Send for our folder on the Care of Walnuts.

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**J. B. PILKINGTON, Nurseryman**  
Portland, Ore.

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tons per acre, highly nutritious because of the large proportion of grain. The seed required is about 8 pounds per acre. The Bloody Butcher variety matures a little earlier and therefore cures better, but as most of the corn grown is for silage purpose the Perfection is more satisfactory because of the larger yield.

Some years ago Mr. Pearsall also began experimenting with a pop corn, yielding large crops, which after being acclimated he finds very satisfactory for forage. The seed is planted in rows three feet apart, hills one foot apart in the row, four to six kernels to the hill. When planted in April to May 1st, this pop corn grows from two to four feet and matures by August 15th, just in the right stage for hogging off. The yield has been at the rate of 75 bushels per acre. It takes about four pounds per acre for seeding. This crop could be cut with mower or reaper and made into silage for early fall feed if necessary.

#### Hog Raising.

Mr. Pearsall also raised 40 head of Duroc hogs last year, on which he figured a fair margin of profit. His method is to have the pigs farrowed in April, and at the same time he seeds a few acres of Essex rape. At weaning time, about six or seven weeks, when about a foot high, this makes excellent pasture, on which the pigs are kept, with very little ground grain mixture until the pop corn is ready to hog off in August. After a certain acreage of this is finished, the Bloody Butcher is ready for hogging off and the pigs are rounded up in good shape for the market in October. The gain when feeding on the corn is at the rate of 100 pounds gain in weight for each 400 pounds of the corn, or at the rate of 25 hogs per acre. Vetch is also a good forage crop for hogs, but the seed costs more, while rape can be obtained at a cost of \$1 per acre for seeding.

#### Practical Dairying.

Mr. Pearsall has a pure bred Holstein herd of 56 head, most of the cows being heavy yielders. Being a member of the local cow testing association, each individual animal is required to make a satisfactory showing in the profit margin, above the cost or value of her feed.

There are two Crown silos on this place, of 100 tons capacity, and they are used continually throughout the year, first for the clover crop, which is cut when nearly matured, and used as required until the corn is ready in the fall.

The soil on this farm is a black clay loam, enriched with the fertilizers available on the farm, and a rotation with clover for a couple of years, then potatoes one year, and corn the next year. Mr. Pearsall is preparing to apply ground lime stone also to the clover fields, to increase both the yield and the nutritious quality of the feed. Thorough preparation previous to the planting of any crops is the system in practice. The ground is plowed, harrowed, then disked, re-harrowed and disked several times until the seed bed is in a thoroughly pulverized condition.

During ten years experience in corn growing on this farm, there has been no such thing as failure and Mr. Pearsall is of the opinion that the Coast section of Washington will become one of the greatest and most profitable corn silage producing dis-

tricts known, and corn silage with the clover, vetch and peas as basis for dairy feed. The dairy industry in this state, when properly handled, will certainly be a winner.

#### FARM FENCING PROBLEM.

The extent to which wire fencing is now being used is shown in a recent report, published as Bulletin 321 of the department, which contains the results of investigations into the cost of fencing farms in the North Central States. In 12 States from which data were obtained wire constituted more than 70 per cent of the fencing, and in four other States was more than 99 per cent.

The general and increasing use of wire for farm fencing in this section has compelled the farmer to consider very seriously what system will be most suitable to his needs. A farm fence, says the bulletin already mentioned, should combine the two qualities of service and economy. To give satisfactory service it must be constructed so as to turn all kinds of stock without injury to them. To be economical it must be built as cheaply as is consistent with durability. The fence that is erected at a low initial cost is not necessarily economical, for it may be short-lived.

In selecting a woven-wire fence, it is preferable to economize by eliminating unnecessary wires rather than by using a lighter-weight wire. A fence the spacing in which is too wide to turn swine satisfactorily will prove quite adequate when only cattle, sheep, or horses are to be considered. The farmer, therefore, who keeps no swine can save money by doing away with wires that are not needed. The factor which determines the price of woven-wire fencing is its weight, so that in fences of the same height a wide-spaced fence with comparatively few wires costs less than a narrow-spaced one with more wires. On the other hand, it is becoming generally recognized that the use of heavy wire in fencing is economical. The initial cost of the heavy wire is greater, but its durability is more than sufficient to offset these disadvantages.

#### WEISER RURAL CREDIT PLAN

At the recent irrigation convention, North Yakima, one of the speakers described the rural credit plan in operation at Weiser, Idaho, which seems to be in good working order.

Under its system an association of business men and farmers is formed. A committee passes upon the amount of credit each farmer is entitled to owing to his condition. He gives a chattel mortgage to the association and in return gets a check book which he uses in making purchases from the merchants in the association. He pays by check.

The merchant takes this to the secretary of the association, who indorses it and gives the merchant a statement of the amount of credit that farmer still has. The merchant takes the check to the bank and is credited with cash to the amount of the check, which the bank holds as it would any other note. It draws 7 per cent interest. After a trial of two seasons the farmers and merchants of Weiser are well pleased with the working of the plan and more associations are being formed.

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**LIME AND FORAGE CROPS.**

To obtain large crops of peas, clover, alfalfa or vetch it is necessary that the soil contains some lime. For years the people in the middle states tried to grow alfalfa without much success. They were advised to apply lime, which was done and satisfactory yield was the result. Lands east of the Cascade range are naturally rich in lime and there alfalfa is a staple crop. In the coast section, where soils are deficient in lime a large increase in yield is influenced by the application of lime and it is generally conceded that ground lime stone is the best form in which to apply.

**SILO SURVEY.****A Very Wet or a Very Dry Year Makes Silos Especially Useful.**

Altho the silo is a great feed saver every year, it has been especially valuable in preventing the loss of soft corn, early forage crops, or in increasing the usefulness of the drought-hurt crops of the last few years. This is one of the many conclusions drawn by I. F. Gillmor, County Agent for the Missouri College of Agriculture, the United States Department of Agriculture, and the Marion County Farm Bureau. Mr. Gillmor believes that a valuable part of his service to the people whom he represents is to find out just what good things the best farmers are doing and let others know about them. Consequently, he made a careful silo survey of his county in which he found 200 silos, of which 118 are wood stave, 29 solid concrete, 27 flooring stave, 6 vitrified tile, 6 concrete stave, 4 pit, 2 brick, 2 concrete block, 1 modified gurler, and 1 stone.

Prof. King gives the following suggestions relative to size of silo and number of cows:

For 10 cows—Height 30 feet, diameter inside 8 feet 9 inches, capacity 36 tons.

For 15 cows—Height 30 feet, diameter inside 10 feet 9 inches, capacity 54 tons.

For 20 cows—Height 30 feet, diameter inside 12 feet 5 inches, capacity 72 tons.

For 25 cows—Height 30 feet, diameter inside 13 feet 10 inches, capacity 90 tons.

This would allow for a normal feed of silage of 36 pounds per day for 200 days for each cow. Experience has demonstrated, however, that it is more economical to feed a little less of silage, 25 to 30 pounds per day, and add to the variety of the rations by using more dry forage and some grain.

Thirty pounds of corn silage, fifteen pounds alfalfa hay, makes a nicely balanced ration. For a dairy

cow add one pound mixed grain for each five pounds of milk she is giving; for fattening steers one-half pound of grain for each 100 pounds live weight.

It is not advisable to build a silo more than 16 feet in diameter, and it is better to have two small silos than one too large.

The height above the foundation should be at least twice the inside diameter. The tons of silage required indicate the height, and they depend on the period for which food has to be provided. The average weight of a cubic foot of matured silage may be taken at 40 pounds. One ton accordingly will take up 50 cubic feet, and 100 tons 5000 cubic feet. During six months, or 180 days, ten cows, each consuming 40 pounds daily, would require 36 tons of silage, which is contained in 1800 cubic feet.

In the Pacific Northwest thousands of wooden stave silos will be built this year, for farmers generally have come to realize that with the silo every particle of forage crop grown can be utilized and it virtually means an increase of at least from 25 to 50 per cent of the cropping capacity of the farm. Clovers, vetches and peas, mixed or separate from wheat, oats, rye or barley, is ready for the silo about June 1st, and acclimated corn is now becoming a leading crop for silage in the Coast section.

Some of the demonstrations made last season indicate that corn silage will be grown very extensively in the Pacific Northwest on both sides of the Cascade range.

The silo solves the feed problem for the individual farmer to a very full extent. In some districts of Wisconsin and Iowa about 60 per cent of the entire feed for dairy herds is silage. In less than five years the same will be true in the Pacific Northwest.

**THE ERA OF THE SILO.**

In the evolution of American agriculture the years between 1915 and 1920 will properly be designated as the Era of the Silo. Until this source of cheap feed supply came into use, live stock as a factor on the farm depended largely on producing cheap corn. But corn at 60 cents a bushel or more is too much of a luxury for feeding and fattening animals on the farm unless their destination is the market where prices must cover the cost of production. The silo not only takes care of the corn which does not reach the normal grade of maturity for cribbing, but turns the millions of waste fodder into a feed of highly fattening quality. In other words, the silo is the fortress by which the American farmer restores and develops the fertility of the farm acres to pristine productivity.

**IRRIGATION**

Adequate, available moisture during growing seasons.

**COST OF CARROTS BY IRRIGATION.**

Stockmen of the Pacific Northwest who have been devoting much energy and study to the finding of succulent forage for winter feeding and have stood considerable expense in trying to produce silage corn in northernly climates have their attention called to carrots. An ex-

tension bulletin of the State College of Washington tells about carrots—how to grow, dig and pit them, and the acreage cost of production.

The actual cost per acre of carrots produced were:

1. Plowing the land (fall) ..\$ 2.00
2. Double disking ..... .90
3. Planing, or leveling ..... .50
4. Four good harrowings ..... 1.00
5. A light clod-mashing ..... .25

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will clear an acre from one anchor. The only stump puller that changes speed while in operation—the only puller that gives you five machines in one. We back the Kirstin with an iron-clad guarantee and invite full comparison with any other stump puller or land clearing method. Our Big Free catalog tells all about the easy, economical KIRSTIN way of clearing land. Write today for your copy. Agents wanted.

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The above figures were secured from an actual four-acre field of carrots.

Less than 50 cents per Ton.

On July 1st, parts of the field were dug and carefully weighed. It was found that there were 25 tons of carrots per acre. Two months later, the remaining carrots were dug and weighed, making the total yield 35 tons per acre. While this may seem to be an exceptionally large yield, it was no larger than other yields in the same region, where there had been an equally good stand of carrots.

Conditions of soil preferred by carrots are described as a deep, rich, sandy loam which is well cultivated, well drained, free from trash, stones and weeds. It is well if a crop of clover, vetch, Canadian peas, or an application of well rotted manure precedes the carrots. The more desirable seed-bed is made by deep fall plowing, or early spring plowing accompanied by the disking and harrowing necessary to make a well pulverized seed-bed 10 or 12 inches deep with a firm sub-surface and a well pulverized, moist surface mulch about an inch in depth.

#### TYPES OF TRENCHING MACHINERY.

Apparatus for Digging Tile Trenches, Ranging in Cost from \$18 to \$6,000.

Some form of trenching machinery will prove a profitable investment, according to engineers in the United States Department of Agriculture, if the landowner has more than 100 rods of tile drain to lay in soil that will require picking but which is free from rock. Ditching plows that can be purchased for \$18 to \$20 will prove of material assistance in such work.

The various types of trenching machines are divided, in Farmers' Bulletin 698, a new publication of the United States Department of Agriculture, into four classes: (1) Plows and scoops, (2) wheel excavators, (3) endless chain excavators, (4) scraper excavators. The plows and scoops range in price from \$18 for a simple ditching plow to loosen the dirt and make handshoveling easier, to plows costing \$300 and fitted with devices for lifting out the dirt and trimming the trenches. The other three classes are usually elaborate machines costing \$1,200 to \$6,000, which may not be profitable investments for the average farmer who has only a small amount of draining to do. However, where there is much drainage to be done it will be well for the landowner to investigate the advisability of purchasing some trencher which has a detachable tractor. When not needed for trenching, the tractor may be easily separated from the digging apparatus and used in all ways which a farm tractor is ordinarily employed. Another method of securing the services of a power machine is for several landowners to combine in purchasing it.

"Three things are required of a good trenching machine, namely: (1) It must operate efficiently through various kinds of soil; (2) it must be capable of cutting true to grade; (3) it must work for long periods without breaking or otherwise getting out of order." Probably none of the plows or scoops cuts accurately to grade, and some hand work is necessary to make the trench smooth for laying the tile properly. However, their low cost makes it profitable to employ them on work that would not justify the use of more expensive machinery.

The cost of trenching by machinery must include, besides the expense for operation and repairs, interest on the investment and proper charges for depreciation of the machine. The interest and depreciation charges are continuous whether the machine is working or idle. The real difference in cost of trenching by machinery and by hand is not so great as it is often supposed to be, but many times there are advantages in having the work done quickly or in employing only a few men instead of a large number. The more expensive machines will be profitable if the owners can keep them busy a large part of the time.

#### SHEEP ON IRRIGATED LANDS.

Last month Mr. Kaufman of Belingham explained how fern roots were turned into cash by means of hogs even at a good profit.

There are numerous irrigators who have the experience of turning weeds which grow along the irrigating ditches, into profit by means of sheep.

Dr. R. H. Williams, animal husbandman of the Arizona Experiment Station has given this matter careful attention and recommends that ditches and canals be fenced where practicable and sheep kept to destroy such growth as might clog the water courses. As vegetation of different kinds thrives along ditches and canals, additional seeding might be made to any voluntary crops and thus afford more pasture to be converted into profitable wool and mutton.

Sheep are a net asset as the work performed by them in keeping the ditches free from weeds and thus saving considerable expense, will more than cover the cost of keeping them. At least \$1.50 worth of wool should be obtained from each sheep and an average of \$5 for each lamb raised. Thus, it would seem that a farmer could count on about \$6.50 of net profit for each sheep maintained on the farm. Care, however, should be exercised not to have too many sheep as their special place is to make use of weeds. For this purpose they require very little attention or labor except drinking water and removing the wool. Care should be taken that the ditch banks are supplemented by alfalfa hay when weeds are scarce. About one sheep for every two or three acres of irrigated land is considered a reasonable number.

It is certain that farmers on irrigated land as well as those on dry farms will use sheep to advantage in the near future. Farmers would do well to fence their ditches and purchase a few sheep suitable for this purpose.

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Before he swung his cable, shore to shore,  
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Bearing a slender cord for unseen hands  
To grasp upon the further cliff and draw  
A greater cord, and then a greater yet;  
Till at the last across the chasm swung  
The cable—then the mighty bridge in air.

So we may send our timid thought  
Across the void, out to God's reaching hands—  
Send out our love and faith to thread  
The deep—  
Thought after thought until the little cord  
Has grown to a chain no chance can break,  
And—we are anchored to the Infinite!  
—Edwin Markham.

## SLEEP ESSENTIAL FOR YOUTHS.

## Insufficient Rest Is Criminally Injurious.

"One result of insufficient sleep is juvenile crime," said Miss Ravenhill, formerly of King's College, London, in an address to Oregon home-makers at the Agricultural College. Miss Ravenhill made her investigations among the school children of Great Britain. "The only way to get rid of fatigue," said she, "is by sleep, since fatigue is a poison caused by activity without rest.

"We have frequently heard it said that change of occupation is rest, but it is not. There is an advantage in fatigue in that it warns us when we need rest, but over-fatigue has bad effects, sometimes permanently bad. Just as continued stoking of a furnace without cleaning out the ashes causes it to burn more and more poorly, so insufficient sleep keeps us from living as we should live.

"The fatigue poison has a stimulating effect at first on the nervous system, under the influence of which boys are apt to do deeds that seem to them deeds of daring, which in sober moments they would not do. They are literally influenced through loss of sleep.

"We must set our faces against evening entertainments for children. Many school children are sent to bed at a seasonable hour during the week but this rhythm is broken for them on one or two days of the week. This irregularity is very injurious and sitting up one night cannot be made up for by the regularity of many nights."

## COLDS.

Colds and influenza are to be dreaded. Cold in the head, or acute rhinitis, to use the technical name for it—what we ordinarily call "snuffles" in an infant—is one of the most neglected ailments of childhood.

A cold comes on suddenly. There is a great deal of sneezing, and difficulty in breathing thru the nose. For the first few hours, or perhaps a day, the nose is very dry, and feels swollen. Then begins a discharge, which at first is very watery, and later, if the cold is neglected, becomes thick and yellow, containing pus. A baby with such a cold suffers a great deal, because all breathing must be thru the mouth, and this makes nursing difficult. At the very beginning there may be a little fever, but it is slight, and lasts only a few hours.

It is safe to say that the majority of colds in strong, robust children tend to disappear in five or six days without being treated. But if the child is delicate, and his resistance low, his cold, if untreated, will soon become chronic. Sometimes a child will apparently get well, only to have repeated attacks. When a cold runs into a chronic state, the delicate membrane lining of the nose becomes infected with many germs, pus is formed, and the discharge becomes heavy, thick, and yellow.

When once pus is formed, the child must be carefully watched, for the pus may get into his throat and travel up the small tube which leads from the back of the throat to the ear, causing an abscess of the middle ear, with all the distressing symptoms of severe pain and subsequently impaired hearing or deafness. In the throat, the infection may cause acute laryngitis, or, extending to the bronchial tubes, lead to bronchitis.

As soon as a cold starts, the first step is to give castor oil—two teaspoonfuls to a child one to two years of age, one teaspoonful to a child under a year old. During the first few hours, great relief may be obtained from the use of menthol—one-half of a grain dissolved in an ounce of alcohol for babies; one grain dissolved in an ounce of alcohol for children over one year old. Three drops should be dropped into each nostril every hour, by means of a medicine dropper. If the child is old enough to be made to understand, so that he will not be frightened by the treatment, the alcohol may be sprayed into the nostrils with an atomizer. It is wonderful what almost instant relief this will give, especially in making breathing easy.

Much can be done to break up the cold if, in addition to the other remedies suggested, tincture of belladonna be given internally. For a child under one year of age, five drops of belladonna should be put into a half glass of water, and a teaspoonful of this given every hour until eight doses have been taken. For a child in his first year, ten drops may be used in the same amount of water, and given in the same way; and for the child over two years of age, fifteen drops may be used in the same amount of water. If this treatment



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To furnish daily market service, we have arranged a club rate with the Daily Produce News, published at Seattle. The regular price is 50 cents a month or \$5 a year, but we send this daily one year and the Northwest Horticulturist & Dairyman three years for \$5, or the daily 3 months and this paper one year for \$2.

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I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

Big Catalog FREE  
Over 700 illustrations of vegetable and flowers. Send yours and your neighbors' addresses.  
R. H. SKUMWAY, Rockford, Ill.

## Franquette

Grafted Trees  
on  
Black Walnut

Two thousand Franquette and Mayette trees in different sizes. Stock and strain of highest quality.

Table Grapes, strong vines, olives, almonds and other stock. Write for list and prices.

TABLE GROVE NURSERIES  
Healdsburg, Calif.

## 6 Glorious ROSES

MAILED POSTPAID FOR ALL WILL BLOOM THIS SUMMER 25c

Hardy, Everblooming, Guaranteed True to Name  
NERISSA—Delicate pink, deep center  
DEEP VELVET CRIMSON—BRITISH QUEEN—Splendid pure white  
MRS. AARON WARD—Glorious coppery orange  
MRS. E. ALFORD—Large silvery pink  
RADIANCE—Brilliant rose carmine

I will send the 6 Roses in large 2-year-old postpaid for only \$1.25.

DAHLIAS  
SURE BLOOMING COLLECTION  
DOLLY DE GRASSE—Double yellow  
ZOLU—Violet double  
GOLDEN WEDDING—Clear yellow  
A. D. LIVING—Pure rose pink  
GOLDEN GLOVE—Salmon

WM. AGNEW—Glorious double red  
One dollar, any variety, 15 cents. Any 3 for 50 cents. The 6 for 75 cents postpaid.

DAHLIA SEED  
New Century, Cactus, Black Striped, Double, Single, all colors. For 10c. 50 seeds—worth \$1.50  
Miss Jessie M. Good Catalog FREE.

MISS JESSIE M. GOOD  
Florist and Dahlia Specialist Box 221 Springfield, Ohio

A Modern and Moderate  
priced baking powder.

Raises perfectly  
because it is

PURE AND  
DIFFERENT



All Grocers Pound Can 25 cents



is given in the beginning, the cold will almost invariably be promptly checked.

Never use a syringe or other means of irrigating the nose which requires force, for the pus may thereby be forcibly driven up into the ear, causing abscess.

A child with a cold should be kept warm or indoors, for exposure to cold may cause the inflammation in the nose to extend into the throat and lungs. Keep bowels open and see to it that the limbs are kept warm and that the general circulation of the blood is good and well nourished. This applies both to children and adults.—Wm. H. Galland, M. D., in the February Mother's Magazine.

### BAKING POINTERS.

Bread is one of the simplest of our cooked foods, but making it involves some very complicated processes which will give better results if thoroughly understood by the housekeeper, according to Miss Addie D. Root, of the Missouri College of Agriculture. The first essentials are perfectly clean vessels and good strong yeast. Whatever kind is used should be tested to see that it is not too old to give good results. It contains little plants which grow and give off gas, thus causing the bread to rise. In old yeast most of these plants are dead, so it is best to see whether it is live enough to form bubbles or foam in a few minutes after yeast has been added to sugar and luke warm water.

In mixing the dough if the flour is added gradually and thoroughly beaten into the liquid it will carry in enough air to make the yeast plants grow, for air is almost as necessary to them as it is to animals. If the dough is made too stiff, hard, dry, crumbly bread will result, so as little flour as possible should be used, but enough must be used so that the dough will not be sticky.

In kneading, use a quick, even stroke and be sure that the yeast plants reach every part of the bread in order that it may have a good even texture. Never knead bread over

thirty minutes, as too long kneading will destroy the elasticity of the dough. After fifteen or twenty minutes the surface will usually be smooth and velvety and gas bubbles will begin to appear, indicating that kneading has been continued long enough.

Set the bread to rise in a clean bowl covered tightly. If the temperature is kept between 80 and 95 deg. F. it will not be necessary to oil or moisten the surface to keep a crust from forming. If the dough is kept too warm while rising it will become soft and runny, too much gas will be formed, bacteria will grow, and the bread is likely to be dark, coarse and sour. Chilling will not stop the growth of yeast and formation of gas, but is likely to cause an undesirable crust to form over the dough. When the dough has risen in a warm, even temperature to about twice its first bulk and been properly worked, there should be little danger of souring.

The oven should be just hot enough to stop the dough from rising in the pans, after it is put in to bake, but should not be too hot at first. If a thermometer is used, start the bread in an oven at 360 deg. F., and increase the heat gradually for fifteen minutes, but lower it again after about 30 minutes. The bread should begin to turn brown in patches during the first fifteen minutes, and should have an even brown surface at the end of half an hour.

If the dough has not risen to twice its original bulk it may be started in a cooler oven and allowed to continue to raise during the first ten minutes of baking.

We have careful thoughts for the stranger,  
And smiles for the coming guest;  
But oft for our own  
The bitter tone,  
Though we love "our own" the best;  
Ah! lips with the curve impatient,  
Ah! brown with that look of scorn,  
'Twere a cruel fate  
Were the night too late  
To undo the work of the morn.  
—Margaret E. Sangster.

### CHARACTERISTICS OF NEW ROSES

Before the Pacific Coast Association of Nurserymen, San Francisco, Calif., by Chas. Howard, Hemet, Calif.

In considering New Roses we must do so from the world's view point and if that is done the hardy kinds will demand considerable attention.

Highly bred tender roses in the Teas and Hybrid Teas have their place, and it is a favored section for them along the Pacific Coast. Even outside this section the most sanguine do not fully realize their scope.

The value of a New Rose depends somewhat on its adaptability—does it like your climate? Your friend who lives on the East side of the hill maybe must plant other varieties from the one that lives on the West side, and so it goes the world over with many of the tender roses. Notwithstanding, they will never be less popular, but there is so much chaff to be sorted out, and while the sorting is going on it might be wise (even kind) to advise continual planting of the hardy blood.

Climbing roses have made the greatest strides of development during the past few years, and today there is no situation in which they cannot be used to advantage; for arches, walls, trellis, pergola, in any aspect; for weeping and creeping, or as specimen bushes; and for pot culture even more than in the past.

One hundred miles East of Los Angeles, where Desert Climate Roses grow, in mid-summer Etoile de France is always in bloom. It likes the climate. This branch of the new Climbing Etoile de France shows the great vigor of this climber and the flowers are identical with the bush from which it is a sprout. With plenty of water it seems this new climber might do well for His Satanic Majesty.

This is a branch of the best Yellow Climber yet introduced. We always think "Marechal Neil" when mention is made of a yellow climber, but this variety we imported from England is more vigorous and hardy and the color is superb. It is Climbing Sunburst and will certainly prove popular—watch it.

### GARMENT PATTERNS

Order by number. See description below.



1584—Child's Sleeping Garment—Cut in 5 sizes: 2, 4, 6, 8 and 10 years. It requires  $\frac{3}{4}$  yard for the hood and  $\frac{3}{4}$  yards for the robe of 27-inch material for an 8-year size. Price 10 cents.

1569—Ladies' Shirt Waist—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires  $\frac{3}{4}$  yards of 36-inch material for a 36-inch size. Price 10 cents.

1568—Ladies' Costume—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 36 will require  $\frac{6}{8}$  yards of 44-inch material. The skirt measures about  $\frac{3}{4}$  yards at its lower edge. Price 10 cents.

1583—Ladies' Kimono—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6 yards of 44-inch material for a 36-inch size. Price 10 cents.

1380—Ladies' Apron—Cut in 3 sizes: Small, medium and large. It requires  $\frac{6}{8}$  yards of 36-inch material for a medium size. Price 10 cents.

1576—Junior Dress—Cut in 3 sizes: 12, 14 and 16 years. It requires  $\frac{2}{3}$  yards for the gimp, and  $\frac{3}{4}$  yards of 36-inch material for skirt and bretelle for a 14-year size. Price 10 cents.

1452—Girls' Dress—Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 3 yards of 40-inch material for a 6 year size. Price 10 cents.

1295—Girls' Drawers, Petticoat and Under Waist—Cut in 6 sizes: 7, 8, 9, 10 and 12 years. The drawers require  $\frac{1}{2}$  yards of 36-inch material, the petticoat requires 2 yards, and the underwaist  $\frac{1}{2}$  yards for a 10 year size. Price 10 cents.

About 10 day's time required.

NORTHWEST HORTICULTURIST & DAIRYMAN  
Box 1604, Tacoma, Wash.

### Nursery Stock

FRUIT TREES  
SMALL FRUITS  
ORNAMENTALS

Growers are now planting small fruits, to supply the market for fruit juices made from the different berries, also the large fruits to supply the demand for dried apples and pears. We have the choice logan, raspberry and blackberry plants, also the trees of the varieties for dried fruit purposes, offered at very reasonable prices.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY  
F. J. Rupert, Mgr.  
SALEM OREGON

### VETCH AND CLOVER SEEDS

That are tested by the famous O. A. C. germination and purity test. All seeds double sacked to prevent loss by leakage. We can furnish for prompt shipment, Red and Alsike Clover and Winter Vetch. Also Winter Rye, Barley, Wheat, Oats, and all kinds of grass seeds. Lowest market price f. o. b.

Corvallis Flouring Mills  
Corvallis, Oregon

### "Carco" KILLS MAGGOTS

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers, who are highly pleased with results.

#### SOME OF OUR PRODUCTS

Fish Oil Soap Lice and Mite Liquid  
Fly Chaser Carbolineum  
Creosote Crude Carbolic  
Disinfectants Wood Preserving  
Materials

For Sale By All Leading Seed Houses  
On Pacific Coast. Ask For It.

Manufactured ONLY by  
Standard Chemical Company  
TACOMA, WASH.  
(Send for Circular)

### Bigger Crops

are being grown every year by farmers who are improving their soils by using

### FERTILIME

Government experts agree that Western soils need lime to remove the acid sourness.

Ordinary lump lime is slow to act and 50% waste.

"Fertilime" saves this waste; brings the plant food from the soil; is easy to apply; and acts the first year.

For best results use "Fertilime" in the winter.

If your dealer cannot supply you, write our nearest office.



F. T. Crowe & Company

Seattle Portland Tacoma Spokane

GROUND LIMESTONE AT LOW RATES

YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.



In recent years the yellow varieties have had a little more attention than other colors. At our Western Flower Shows today more Lady Hillingdons are displayed than all other yellows combined—simple reason, it is a Tea variety and produces more flowers than some of the others. But in the near future we will see more of such kinds as Mrs. Aaron Ward, Sunburst, Herzogin Marie Antoinette, Miss Alice de Rothschild, Alexander Hill Gray and Old Gold. Some of these have decided apricot and bronze tints, but are all generally called yellow.

In the new white varieties British Queen has taken its place along with Kaiserin Augusta Victoria, and in Madison all lovers of The Bride will find a good substitute free from mildew.

New Roses in pink are numerous and it is hard to select the choicest, but there is little doubt about Willowmere, Mrs. Geo. Shawyer, Radiance and Ophelia being in the lime light. Ophelia and Willowmere are salmon pink.

Good red roses are about as difficult as good yellows, but there are many new ones that are very promising. Robin Hood, Olivia, Prince E C d'Arenberg and Ecarlate all have worthy qualities, and if Edward Mawley likes your climate as well as Gen. McArthur does it will have just as many friends, which is saying a good deal. Others that should not be overlooked are Laurent Carle, Geo. Dickson, J. B. Clark, Francis Scott Key and Gen. Superior Arnold Janssen. Crimson Queen in perfect form and maroon shadings is a grand acquisition. It is inclined to grow—the one quality that forced Chateau des Clos Vougeat out.

Frau Karl Druschki is wonderfully popular. Why? It grows for the people, delivers the goods for the people, in the climate the people live in. For the same reason Geo. Ahrends, the new pink Druschki, will be very popular. Experts handling roses under glass first learn the temperature required and not until he does learn this can he expect success. Very recently the Australian Argus asked its readers to vote on the 12 most popular roses—Frau Karl Druschki received 390 votes, more than three times the number received by the last on the list. Geo. Ahrends, this new pink, seems to have the same growing qualities.

The old Crimson Rambler is a wonder. As Polyanthas are judged it is still the ideal, and after seeing the new polyantha varieties the American Pillar and Tausendschoen we wonder how it can hold that position.

Wichuriana hybrids are the most wonderful yet produced, you will all agree. Some thirty years ago the first Wichuriana was introduced from Japan, and in that time maybe we have had 50 of its hybrids put on the market, and a large number of them are worthy. Over 16 years ago in York State I was shown several roses in little pots and was told a certain particular growth indicates some hybrid blood. The next few months while we were watching these little hybrids develop the bright little grand daughter of the firm continually made baby eyes and love to us in such a way that two years later we were happy indeed to buy this New hybrid rose named in her honor, Dorothy Perkins. Probably no one dreamed in those days the rose would become famous the world over, but today we have not only the pink Dorothy Perkins, but a red and a white, also a yellow in Shower of Gold good enough to be called a yellow Dorothy Perkins, and they are all Wichuriana hybrids. The new hybrid single white, Silver Moon, is certainly grand, and why the old original Wichuriana is ever planted with this new one on the market is beyond me. In 1903, the year after Dorothy Perkins was distributed, Lady Gay, with its cherry pink shadings, was introduced and is still a strong bidder for first place, but as all Wichurianas are judged, Dorothy Perkins is still the ideal. Many of this strain make good pillar roses and as standards they are unrivalled. In England they say no other standard will compare with a well trained Wichuriana standard.

Pernet Group—Another class of hardy hybrids we must not overlook is being developed from the old Austrian Briar. This briar crossed with Antoine Ducher gave us Soleil de Or, a strong yellow which has proved a most useful parent; Arthur R. Goodwin, Rayon de Or, Juliette, and Lyon are all descendants. Beaute de Lyon, one of the most promising of recent introductions, is a seedling from Soleil de Or and Mme. Eduard Herriot, introduced in 1913, will entirely displace the old Lyon, for it does not have any Lyon bad habits; the color is better and gives more flowers.

We have never had a Black or a Blue rose, but new roses give us nearly all the other colors. For the future let us have more that will resist mildew, black spot and other fungoid pests. Let us have new roses, fragrant, hardy, and always in bloom. I thank you. (Applause.)

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### LYNDEN CO-OPERATIVE CREAMERY.

1915 Average Butter-fat Price 32.4 Cents, Gross Sales \$292,661.67.

At the annual meeting of the Lynden Creamery Co., the annual report showed that the increase in butter fat receipts was 14%.

The average price paid the farmers for butter fat during the year, ac-

cording to the Lynden Tribune, was 32.4 cents, as against 32½ cents in 1914. The gross sales were \$292,661.67 as against \$296,463.49 in 1914, but the price received for butter dropped from 29¼ cents in 1914 to 27½ cents in 1915.

General Statement of Operations.  
Total lbs. cream rec'd .....3,440,300  
Average test ..... 24.7%  
Total lbs. butter-fat rec'd ....844,087

## HOTEL EATON

West Park and Morrison Streets  
PORTLAND, OREGON  
Located in the heart of the THEATER AND SHOPPING DISTRICT  
A Strictly First-Class House. Our auto bus meets all trains  
J. B. STEINBACH, Manager

## "Diamond Quality" TESTED



YOU can increase your yield and profits by growing our new and improved varieties—acclimated seed. Real moneymakers that give the greatest satisfaction for market and Home Gardens.

OUR 1916 Catalog and Planter's Guide is a valuable reference every grower should have. It lists dependable Farm, Garden and Flower seed and the best equipment for Poultrymen, Beekeepers, Orchardists.

ASK FOR CATALOG NO. 50

PORTLAND SEED COMPANY

PORTLAND, OREGON



## \$140 PER ACRE

My 1915 crop of Blue Bell peas netted me over \$140 per acre over rent, labor and seed, besides \$12 for the straw and \$6 per acre for split peas.

If interested write for circular and prices. Peas will be high next fall.

W. H. KAUFMAN, R. F. D. No. 2, Bellingham, Wash.

The Calf  
You Raise  
Is The Calf  
That Pays

ALBERS Calf Meal

Thousands of calves  
were successfully  
raised last year on  
ALBERS CALF MEAL.

Thousands of dollars  
were saved last year by  
dairymen feeding  
ALBERS CALF MEAL.



RAISE YOUR NEXT CALF ON  
ALBERS CALF MEAL AND SAVE MONEY.

Albers Bros. Milling Co.

SEATTLE

TACOMA

PORTLAND

SAN FRANCISCO

LOS ANGELES

OAKLAND

Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



Butter churned, lbs. ....1,007,646  
 Butter-fat sold, sweet cream ..21,361  
 Over-run .....22½%  
 Gross sales .....\$292,661.67

Total cost of hauling, \$9640.97 or  
 11/7 cents per pound butter-fat.

Total cost of manufacturing and  
 selling, \$13,958.67 or 12/3c per lb.  
 butter-fat.

Total amount paid for freight, ex-  
 press and drayage, \$2,612.07 or 3/10c  
 per lb. butter-fat.

Average price paid for butter-fat  
 32 2/5c.

Average price received for butter  
 27½c.

Increase in butter-fat receipts over  
 1914, 14%.

Highest number of patrons ship-  
 ping at one time, 566.

The company has good buildings  
 and grounds valued at \$8420, a re-  
 frigerating plant worth \$3528. Ma-  
 chinery and fixtures worth \$4295. The  
 capital stock is about \$3000.

Nels Jacobson was re-elected presi-  
 dent; L. Zweegman, vice-president;  
 G. Vander Griend, secretary, and W.  
 H. Jackman, treasurer; G. J. Polinder  
 and D. J. DeHoogh, directors. J. De-  
 Boer was named director, succeeding  
 D. Vander Griend.

The association demands regula-  
 tions defining feeds offered on the  
 market, which will require manufac-  
 turer to stamp on the sacks of dairy  
 feed the different ingredients con-  
 tained and the percentage of each.

## Cow Testing, Montesano District

The following is the report of R. W. McKenna, official tester for the Mon-  
 tesano Cow Testing Association for the month ending January 16, 1916:

| Owner, Name and Breed of Cow—                          | Age<br>Yrs. | When<br>Fresh | Pounds<br>Milk | Pounds   |               |
|--------------------------------------------------------|-------------|---------------|----------------|----------|---------------|
|                                                        |             |               |                | %<br>Fat | Butter<br>Fat |
| Murphy Bros., No. 12, Grade Jersey ....                | 8           | Nov. 1        | 1227           | 5.6      | 68.7          |
| Murphy Bros., No. 4, Grade Jersey ....                 | 8           | Nov. 10       | 1224           | 5.2      | 63.6          |
| Murphy Bros., No. 6, Grade Jersey ....                 | 5           | Nov. 15       | 915            | 6.9      | 63.           |
| E. L. Brewer, The Owl's Golden Queen,<br>Jersey .....  | 5           | Apr. 16       | 891.5          | 6.46     | 57.6          |
| Oscar Smith, No. 35, Grade Jersey ....                 | 5           | Dec. 28       | 975            | 5.7      | 55.6          |
| Murphy Bros., No. 1, Grade Jersey ....                 | 7           | .....         | 1038           | 5.2      | 54.           |
| Murphy Bros., No. 9, Grade Jersey ....                 | 7           | Nov. 1        | 1182           | 4.4      | 52.           |
| Parker Askew, Pogis L. Alpha, Jersey..                 | 7           | Nov. 12       | 951            | 5.4      | 51.4          |
| E. R. Brady, Evaline of Bralee, Guernsey.              | 2           | Oct. 10       | 1008           | 4.8      | 48.8          |
| E. L. Brewer, Olympia's Golden Lassie,<br>Jersey ..... | 4           | Oct. 20       | 921            | 5.       | 46.1          |
| Oscar Smith, No. 97, Grade Jersey ....                 | 5           | Oct. 8        | 954            | 4.7      | 44.8          |
| Murphy Bros., No. 21, Grade Jersey ....                | 5           | Nov. 15       | 858            | 5.2      | 44.6          |
| Murphy Bros., No. 2, Grade Jersey ....                 | 7           | Oct. 15       | 963            | 4.6      | 44.3          |
| W. J. Wharton, Sally, Grade Holstein ..                | 5           | Nov. 12       | 1123           | 3.9      | 43.8          |
| G. C. Collett, Lucky, Grade Jersey ....                | .....       | .....         | 801            | 5.4      | 43.3          |
| A. P. Stockwell, White Beauty, Ayrshire.               | 5           | Jan. 4        | 879            | 4.9      | 43.1          |
| E. R. Brady, Larkfield Fortune, Guernsey.              | 3           | Oct. 9        | 824            | 5.2      | 42.8          |
| Oscar Smith, No. 92, Grade Jersey ....                 | 8           | Nov. 1        | 876            | 4.8      | 42.           |
| W. J. Wharton, Duchess, Grade Ayrshire.                | 3           | Nov. 19       | 930            | 4.5      | 41.9          |
| Oscar Smith, No. 57, Grade Jersey ....                 | ..          | Jan. 1        | 1164           | 3.6      | 41.9          |
| Murphy Bros., No. 20, Grade Jersey ....                | 5           | Sep. 16       | 801            | 5.2      | 41.7          |
| A. H. Arland, Cherry, Grade Shorthorn..                | 5           | Jan. 1        | 842            | 4.4      | 41.4          |
| Murphy Bros., No. 25, Grade Jersey ....                | 8           | May 15        | 756            | 5.4      | 40.8          |
| Murphy Bros., No. 11, Grade Jersey ....                | 7           | Apr. 15       | 666            | 6.1      | 40.6          |

While the highest production of butterfat for any one cow is less this  
 month than the month before, and while there are only 21 cows in the list  
 above 40 pounds, as compared with 24 in the list the month previous, yet this  
 fact can be accounted for by the severe cold wave and snow that has swept  
 over the country. Even though the number and high production in the list  
 was less than in the previous month, yet the average butter fat production  
 in the list was 1.2 pounds more. We can account for this condition by the  
 fact that some new cows came fresh the past month and some that were in  
 the previous month raised their former records, even with the serious weather  
 handicap.

It must be borne in mind that the profitable producers are not all found  
 in this published list. A lack of space prohibits a longer list. As the average  
 production increases with more favorable conditions the published list will  
 likely be cut down to include only those producing over 45 pounds of  
 butter fat.

C. F. MONROE,  
 County Agriculturist.

### KINETH FARM GUERNSEYS.

Mr. J. H. Kineth of Coupeville, Washington, bought 5 head of regis-  
 tered Guernsey cattle from the estate  
 of S. W. Hart of Port Angeles, a few  
 months ago. Mr. Kineth will develop  
 a substantial breeders herd as he  
 realizes there is a growing market  
 for Guernseys on Whidby Island, and  
 when the demand near home is sup-  
 plied some of the orders coming from  
 the numerous dairymen in all parts  
 of the State will be given attention.

### HIGH GRADE HERD RECORD.

Five Guernsey and Jersey Grades  
 Make Net Return in 1915 of  
 \$171.80 Each.

Mr. Harry Keating of Burton,  
 Washington, submits his second an-  
 nual statement showing a very satis-

factory margin of profit from each of  
 his 5 high grade Guernsey and Jer-  
 sey cows, purchased from the Green-  
 bank Company a couple of years ago.

In this statement Mr. Keating in-  
 cludes 8 head of hogs because a  
 large proportion of their feed was  
 dairy by-products. He does not in-  
 clude the value of his labor nor  
 takes any account of the value of  
 the fertilizer, but the showing proves  
 that his cows are satisfactory pro-  
 fit makers. He is raising some fine  
 young heifers, has bought a pure-  
 bred Guernsey sire from E. R. Brady,  
 Satsop, and within the next four  
 years is likely to have such a  
 twenty-cow unit, dairy herd, of pure  
 bred and high grade Guernseys as to  
 make dairy farming a very attractive  
 vocation.

Mr. Keating is seeding heavily to

## Western Washington Holstein Breeder's Ass'n.

Will hold its

## Third Semi-Annual Sale

on the

Snohomish County Fair Grounds  
 Snohomish, Wash.

# March 15, 1916

### Consignors

HUGH NESBIT,  
 Chimacum.

WM. BISHOP,  
 Chimacum.

J. C. BURNAM,  
 Snohomish.

A. E. SMITH,  
 Seattle.

P. S. GOVAN,  
 Sequim.

HERMEN STEFFEN,  
 Monroe.

J. H. HULBERT,  
 Mt. Vernon.

MELBROOK FARM,  
 Fall City.

Seventy-five HOLSTEINS, the "Best in the West," will be  
 sold at this sale.

For copy of Catalog that will be ready for mailing March  
 1st, address the Secretary.

### Auctioneer:

GEO. A. GUE,  
 North Yakima, Wash.

### A. B. WINTER, Sec.

1515 Hewitt Ave.  
 Everett, Wash.

# ALBERS

## MOLASSES FEED

### For Milk Cows

SOYA BEAN MEAL, GROUND BARLEY, GROUND OAT FEED, AND  
 PURE CANE MOLASSES

*Better than Shorts For Less Money*

## Albers Bros Milling Co.

SEATTLE  
 TACOMA  
 PORTLAND

SAN FRANCISCO  
 LOS ANGELES  
 OAKLAND

### Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha  
 Johanna, also grandson of Sir Fayne Concordia, full brother to Grace  
 Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in  
 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days.  
 His mature cows are making 28 to 30 pounds butter in 7 days, and his  
 heifers without exception start with 17 to 20 pounds butter a week, good  
 for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy  
 producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
 NORTH YAKIMA, WASH.



produce more pasture, will raise more of the legume crops for roughage and grow corn silage, thus reduce the feed bill proportionately for each head of stock.

#### Statement for Year Ending 1915.

|                                 |           |
|---------------------------------|-----------|
| Milk and butter sold .....      | \$ 951.96 |
| Milk, cream for family .....    | 75.00     |
| Increase value 2-yr. heifers... | 150.00    |
| Yearling heifer .....           | 35.00     |
| 1 3-month heifer .....          | 25.00     |
| 1 heifer calf .....             | 10.00     |
| 1 veal .....                    | 12.00     |
| 8 head hogs .....               | 80.00     |

Total receipts .....\$1338.96

|                              |           |
|------------------------------|-----------|
| Feed bill .....              | \$ 413.94 |
| Grass seed .....             | 12.00     |
| Interest on investment ..... | 54.00     |

\$ 479.94

|                            |           |
|----------------------------|-----------|
| Net return .....           | \$ 859.02 |
| Returns for each cow ..... | \$ 171.80 |

Total milk produced, 36,871 lbs.; average test 5%. Butter fat produced, 1843.55 lbs., average butter fat per cow, 368.71 lbs.; average milk per cow, 7374 lbs.

HARRY KEATING, Burton, Wash.

#### JERSEYS ECONOMICAL PRODUCERS.

The Jersey breed of dairy cattle is again coming to the front in popularity, as they are being bred and developed for larger frame, with the very desirable type of the imported stock. They are also being trained to adapt themselves more to the predominating feed of any locality, being less discriminating in the make up of the dairy ration than formerly.

#### Some Good 1915 Records.

Burt Pease, Ellensburg, Wash., has a Jersey cow, 4½ and under 5 years old, that stands third in her age class in the records of the year 1915. Loretta D.'s Queen 3d, 266410, produced 9752.4 pounds of milk, 512.15 pounds of butterfat, or 602.8 pounds of butter in the year, and was exceeded by only two cows, one of which is in California. Three of the five highest cows in this class have their homes in Pacific slope states.

In Michigan the Allegan Cow Testing Association showed in their report that eight Jersey herds produced butter fat at a cost of 15.9 cents per pound while five Holstein herds in the same test made butter fat at a cost of 17.1 cents per pound.

In a grand champion cow contest in Minnesota, conducted by the Agricultural College, the Jerseys won first.

In Missouri, the Jackson county Cow Testing Association conducted tests of 324 cows. Twelve made 45 pounds or over of butter fat in the month of October and all but two of these were Jerseys. The high record cow was a 4-year-old registered Jersey and her production was 76.52 pounds, equivalent to 90 lbs. butter.

The Salem Cow Testing Association, in Ohio, entered both Holsteins and Jerseys. The Jersey butter was produced at a cost of 18.6 cents in feed and Holstein butter at a cost of 20 cents.

In Wisconsin, a dairyman realized the ratio of "a cow to the acre" with 40 Jerseys on 40 acres. These Jerseys in 1915 earned \$72 per head over and above the cost of their keep.

In Australia an exhaustive trial inaugurated and supervised by the Australian Herd Book Society, Jer-

seys won over other breeds as producers of milk for both butter and cheese manufacture. The dairy efficiency of the Jersey is universally maintained.

#### CO-OPERATIVE CREAMERY AT CHEHALIS.

The Co-operative Creamery at Chehalis made 237,771 pounds butter in 1915, according to the Bee Nugget. Their gross sales were \$72,576.99 and the farmers were paid 30.4 cents on an average, throughout the year, for butter fat. T. J. Long is president and manager, C. B. Perkins secretary, and W. S. Short Treasurer. The profit for the Association was \$2400.

#### COW TESTING IN LEWIS COUNTY.

A couple of years ago a cow testing association was carried on in Lewis County and the results were so effective to determine star boarders, and to indicate which were the profitable cows, that a second testing association has lately been started. The dairymen in Lewis county figure that there is neither pleasure nor profit in keeping cows which are below a certain standard of production. They want to be considered abundant crop raisers and good feeders, and in return want the kind of cows which will keep them on a reasonable profit basis and with that purpose in view are employing the cow testing method.

#### WASHINGTON JERSEY CLUB.

The Washington Jersey Cattle Club met at Chehalis recently in second annual session. Officers for the ensuing year were re-elected as follows: E. L. Brewer, Satsop, president; B. C. Crabtree, Lynden, vice-president; D. S. Troy, Chimacum, secretary and treasurer; Burt Pease, Ellensburg; E. E. Pettett, Dungeness; A. G. Woodward, Fairbanks and J. H. Taylor, Montesano, directors.

The president was authorized to send letters to state breeders, putting them in touch with the club work; all members are to have literature from the American Jersey Cattle Club, headquarters in New York, for publicity purposes; and the above head organization will be asked to send a field agent to this state to help promote the work of the state organization. The club will also carry on a campaign for wider use of milk as a beverage, in its various forms.

#### AYRSHIRE COW HIGH RECORD.

Over 25,000 Pounds Milk, 1052.83 Pounds Butter in 365 Days.

The Ayrshire cow Garclaugh May Mischief, Imp., owned by Percival Roberts, Jr., Narbeth, Pa., made a net profit to her owner last year of \$529.34. Her exact milk record was 25328.7, making 1052.83 pounds butter, valued at \$706.80.

Her feed consisted of:

961 lbs. Bran, at \$24.00 per ton.

1013 lbs. Schumaker Stock Feed, at \$30.80 per ton.

767 lbs. Hominy, at \$29.20 per ton.

837 lbs. Linseed Oil Meal, at \$37.40 per ton.

1066 lbs. Cotton Seed Meal, at \$29.00 per ton.

149 lbs. Gluten, at \$25.40 per ton.

153 lbs. Ajax, at \$33.80 per ton.

668 lbs. Beet Pulp, at \$26.00 per ton.

11200 lbs. Corn Silage at \$3.00 per ton.

22233 lbs. Beets, at \$4.00 per ton.

1874 lbs. Alfalfa Hay, at \$24.00 per ton.



#### SUCCESSFUL DAIRYMEN

Are constantly figuring to keep down the cost of the feed bills on a well-balanced milk ration in order to

#### MAKE THE LARGEST PROFIT MARGIN.

In the Coast section, clovers, vetches, peas and other leguminous crops rich in protein are grown abundantly, and dairymen require more of the carbonaceous concentrates to make up the economical and substantial ration; for that purpose barley and corn are better suited than any other grains when not too costly.

As by-products of our factory, barley and corn are put up in a wholesome feed mixture showing the following analysis:

#### BARLEY-CORN MIXTURE

|                                   |        |
|-----------------------------------|--------|
| Moisture .....                    | 5.61%  |
| Crude Fat .....                   | 6.38%  |
| Crude Protein .....               | 14.71% |
| Crude Fiber .....                 | 18.25% |
| Maltose .....                     | .82%   |
| Starch .....                      | 36.79% |
| Nitrogen, Free Extract, etc. .... | 14.74% |
| Ash .....                         | 2.67%  |

Total ..... 100.00%

The crude fat, fiber and starch composing over 60 per cent. makes this concentrate a valuable addition to any home-grown feeds rich in protein. Being a by-product we can make attractive prices.

Write for sample, price on quantity, and full particulars.

THE FLEISCHMANN CO.,

Sumner, Wash.

Feed Department

Manufacturers of Fleischmann's Yeast

#### CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## Why Do Dairy Cows Run Down?

No other farm animal is the cause of so much anxiety to the owner as his dairy cows; sickness gets in in spite of the best of care.



#### Why?

Because the dairy cow is subjected to constant forcing to get the maximum in quantity and quality of the milk yield.

This constant strain proves too much for many a good cow; some important function becomes impaired and for want of proper medical assistance she becomes a "backward" cow. In just such cases as these Kow-Kure has made its reputation for success when used to

#### Raise the Health Standard

of the herd. Kow-Kure is a medicine for cows only—not a stock food. It has wonderful medicinal qualities that act on the organs of production and reproduction for the prevention or cure of many serious cow ailments. It is especially useful in cases of Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained Afterbirth, etc. Farmers who have used it keep Kow-Kure on hand constantly. Most feed dealers and druggists sell it.

Sold in 50c and \$1.00 Packages

Dairy Association Co.,

Lyndonville, Vt.

#### FREE BOOK

"The Home Cow Doctor"

A book that should be in every farmer's library is yours for the asking. It may be worth hundreds of dollars in a critical moment.



KOW-KURE AND DAIRY ASSOCIATION REMEDIES are distributed in Washington and Oregon by Portland Seed Company, Portland Oregon, and in California by Germain Seed and Plant Co., Los Angeles, Calif.



906 lbs. Mixed Hay, at \$15.00 per ton.  
Green Feed.  
Total cost of feed was \$177.46.

### SKIM MILK FOR CALVES.

For the development of the calf for dairy purposes skim milk with proper substitutes is better than whole milk, according to the opinion of O. R. Reed, Dairy Husbandman at the Kansas Agricultural Experiment Station.

The skim-milk calf becomes accustomed to eating grain and hay early in life, consequently when it is weaned the change of feed is not so noticeable as it is with the whole-milk calf, and it does not suffer a setback at this time. The calf that has been fed on whole milk has not been accustomed to getting very much of its nutrients from grain and hay, and invariably does not gain as rapidly as does the skim-milk calf for the first two or three weeks after it is weaned.

The skim milk differs from whole milk in that most of the fat has been removed. The other constituents are proportionately increased. The fat in milk is the least important constituent as far as calf raising is concerned. On the other hand, the fat is the most important constituent in relation to the manufacture of dairy products. The fat is used by the animal body to supply heat and energy and store fat on the body. Other feeding stuff, such as corn or similar grain, can be fed to take the place of fat.

The casein, albumin and ash are the most important constituents of milk for the growing calf. These substances are used by the body for making muscle, nerve, bone, hair, hide and hoofs. These elements are left in skim milk.

In the Pacific Northwest some good milk substitutes have been put on the market to take the place of most of the skim milk. The price of milk as paid by the condensers determines to what extent these milk substitutes are being used.

Some good calves are being developed with a very small proportion of milk in connection with these substitutes, also in addition some grain, gruels and good hay or grass is supplied.

### COW TESTING ASSOCIATIONS

#### General Plan of Operation.

A group of dairy farmers, usually not over twenty-six in number, get together, elect officers and organize for the purpose of improving their herds by means of weighing and testing milk from each cow, keeping feed and production records and working co-operatively to improve their dairy interests.

They employ a competent tester recommended by an agricultural college, whose duty is to visit each herd one day a month. He usually arrives in the afternoon, weighs up the hay and grain fed that night and morning, estimates the value of pasture or feed used, weighs the milk from each cow night and morning and tests it for butter fat. All records are carefully kept on blanks supplied for that purpose, and the profit or loss on each cow every month thus arrived at so that by the end of the year or sooner, the records will show whether the cow is profitable or not, whether she should be kept as a producer and breeder or sold to the butcher.

The cost of operating such an association is usually about \$1.50 a cow per year, with a minimum charge of \$15 a herd where the number of cows is small. This money is paid to the treasurer of the association in quarterly installments in advance and is used to pay the tester's salary and incidental expenses.

Each owner agrees to furnish board and lodging for the tester one day a month and to convey him to his next place of work. The tester does not work Sundays, but has board and lodging over Sunday at the place where he works Saturday.

About five hundred cows are necessary to profitably carry on the expense of an association, and each member pays his share of the cost as determined by the number of cows

set opposite his name when he signs the agreement.

A complete set of milk sheets, herd records and production books are furnished free by the Dairy Division of the U. S. Department of Agriculture, to be used by the tester and the members of the association.

A. J. LASHBROOK,  
Pullman, Wash.  
Field Agent in Dairying, U. S. Department of Agriculture and Washington State College.

### PURE BREEDER'S CLUB, CHEHALIS.

#### Lewis County Live Stock Raisers Organize.

About 30 live stock raisers met at Chehalis lately, says the Bee Nugget, and organized the Lewis County Pure Breeders Club.

Mr. N. B. Coffman presented a plan of organization which had been previously prepared by a committee of which he was a member. This plan was read and adopted in its entirety. No dues are required of members of the organization and any owner of a pure bred animal of any kind, including horses, cattle, hogs, sheep, dogs, poultry, etc., is eligible. Honorary membership for people who take an active interest in the breeding of pure bred stock is also provided.

Mr. Coffman, who takes much interest in stock raising, was elected president of the organization, F. M. Svinth was chosen vice-president and J. E. McDonald, secretary of the Citizens' Club, was selected secretary-treasurer.

The pure breeds, well represented in Lewis County, are Jerseys and Holsteins, and a good foundation has been laid by the owners who are becoming skillful and aggressive in their work. They will first endeavor to supply the local demand for foundation herds and within a few years fill orders from elsewhere.

From this time on concerted effort will be made to keep the breeding of registered stock in Lewis County up to the highest possible standard.

### FEEDING DAIRY COWS.

The month of January has been a trying season for dairymen in the Pacific Northwest. Many farmers have been getting the lesson of providing more feed, of keeping better cows from the profit and loss standpoint vividly brought to attention.

Mr. B. S. Fryar, Sumner, Washington, stated recently that when the snowy weather continued his 100 ton silo looked good to him, and no doubt that was the case on every dairy farm where corn silage had been prepared last season. Thousands of silos and ten times as many acres of corn will be produced in 1916, as compared with last year.

When preparing to grow crops for live stock and dairying this season, it is well to consider in advance the necessary rations for a given purpose. All feeding standards according to Haecker, are based on the requirements of an animal weighing 1,000 pounds. For each 100 pounds in live weight that the animal may exceed or fall below the 1,000 pound standard there should be added or subtracted one-tenth of the standard ration. In computing his standard for dairy cows Haecker uses as his basis the maintenance ration already given, namely:

|                               |          |
|-------------------------------|----------|
| Digestible protein .....      | 0.7 lbs. |
| Digestible carbohydrates .... | 7.0 lbs. |



King of  
Medfield  
Sire of  
World's  
Champion  
Guernseys

King of Medfield was the sire of Junior Champion cow, Reserve Junior Champion cow and Reserve Senior Champion bull at the Panama-Pacific Exposition. We are offering some fine young bulls out of advanced registry cows by this great bull at reasonable prices.

A. L. GILE, Prop. **Chicona Farm** Chinook, Wash.

## Moxee Valley Holstein Farm

### A NICE BUNCH OF YOUNG HOLSTEINS FOR SALE

Cows on official test are showing a high butter fat record.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

## TYSON & McKELHEER

Moxee City, Wash.



## PUGET SOUND HERD HOLSTEINS

Winner First Holstein Cow and First Herd at Panama Pacific Exposition

Herd sires "Sir Chimacum Wayne" and "King Korndyke Molly." Their dams are both in the yearly test and making large records. Sir Chimacum Wayne is the only bull in the world whose dam and sire's dam averaged 122.8 lbs. milk in one day and 3,245.5 lbs. in thirty days; and he has a 2-year-old sister that produced 21,572.1 lbs. milk in one year and another sister that holds the world's record as a two-year-old of 105 lbs. milk in one day and 2733.3 lbs. in 30 days. King Korndyke Molly's dam is one of the highest record 3-year-old daughters of Sir Vee-man Hengerveld. His sire "King Korndyke Sadie Vale's" first six daughters have records that average higher than any bull in the world. He is also the only bull in the world with a 41-lb. dam, a 40-lb. sister on his sire's side and a 38-lb. sister on his dam's side.

Young stock for sale.

Wm. Bishop, Prop.,

Chimacum, Wash.

## PUBLIC SALE of JERSEYS

Fifty-one head all registered and the cows have Register of Merit records. The valuable herd of Electric Light Farm, Burt Pease, Prop., near Ellensburg, Wash., will be sold on April 3rd, to close up an estate.

This herd is in A-1 condition, the best American and Island breeding. Among the cows are 12 daughters sired by the Grand Champion bull Gertie's Brown Lad, of the Adam Stevens herd; also 16 daughters of Cowslip's Oxford of imported breeding. Among these are young cows from two to three years old, which produced over 500 pounds butter and nearly 8000 pounds milk in 365 days.

They are good for from 600 to 800 pounds at mature age.

This is one of the greatest opportunities to obtain foundation stock, of high records and breeding ever offered buyers of Jerseys in the Pacific Northwest.

For further particulars write

**BURT PEASE**

Ellensburg, Wash.



Digestible fat ..... 0.1lb.

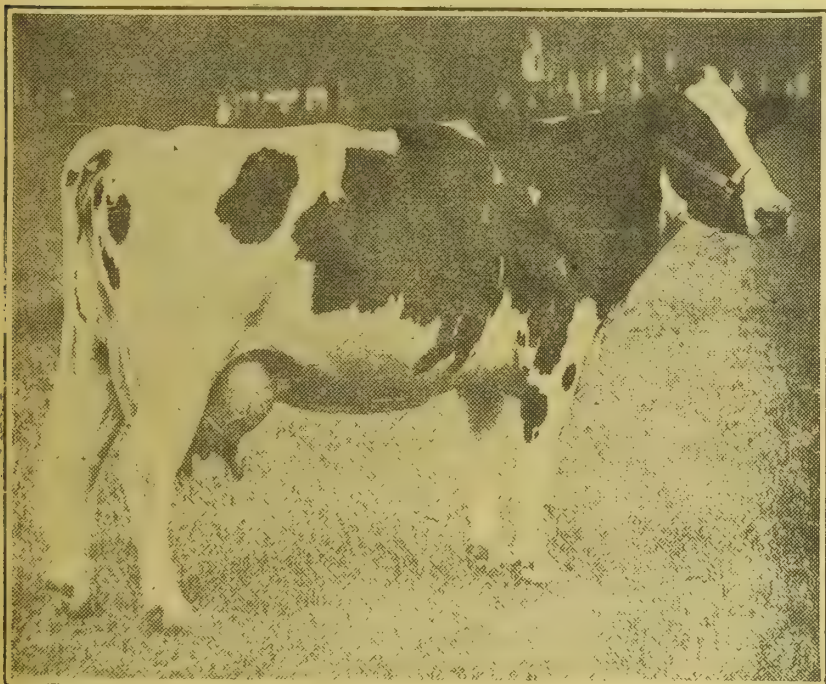
There is some variation in the amount of feed required for maintenance for the reason that cows vary in size and weight. Experiments seem to indicate that small cows require relatively more feed for maintenance than do large cows. Again, cows of the same weight, gentle in disposition and kept under comfortable conditions, will require less feed for maintenance than cows kept in uncomfortable quarters or of nervous and irritable disposition. However, rations closely conforming to the Haecker standard should keep the average 1,000 pound dry cow without gain or loss in weight. In computing the feeding standard for dairy cows Haecker adds to his maintenance ration according to the amount and quality of milk the cow gives.

The feeding standard for a 1,000 pound cow giving 20 pounds of 4 per cent milk is: digestible protein, 1.68 pounds, digestible carbohydrates, 11.6 pounds, digestible fat, .4 pound. The following is a sample ration for a 1,000 pound dairy cow giving 20 pounds of 4 per cent milk:

| Ration—Lbs.       | Pro-tein | Car-bohy | Fat |
|-------------------|----------|----------|-----|
| 12 Red Clover Hay | .82      | 4.30     | .20 |
| 30 Corn Silage    | .27      | 3.39     | .21 |
| 2 Bran            | .26      | .80      | .07 |
| 4 Barley          | .35      | 2.62     | .06 |
|                   | 1.70     | 11.11    | .54 |

H. L. Blanchard gives the method of working out the digestible nutrients in 100 pounds of a feed, is as follows:

In 100 pounds of red clover hay there are 6.8 pound of digestible protein, 35.8 pounds of carbohydrates and 1.70 pounds of fat. By dividing these amounts respectively by 100 we get the amount of each nutrient contained in one pound of red clover hay, viz.: Protein .068 pounds, carbohydrates .358 pounds, fat .017 lbs. Multiplying these amounts respectively by 12, the number of pounds of clover hay selected for the ration, we get the result given in the above ration. Thus we calculate the amount of digestible nutrients contained in each food composing the ration. The above ration provides all the nutrients the cow needs for a daily yield of 20 pounds of milk, if kept in comfortable quarters and properly cared for, and the feed can be increased in proportion to either or both the yield and size of the cow.



World's 1-year butter record Holstein Cow Duchess Skylark Ormsby 124514. A. R. O. at 5 years, 3 days old—In 7 days, butter 34.36 lbs.; milk 558.10 lbs.; average fat 4.92%. Semi-Official—In 365 days, butter 1504.6 lbs.; milk 27,800.0 lbs.; average fat 4.32%. Owned by John B. Irwin, Woodlake Stock Farm, Minneapolis, Minnesota.

## THE LARGEST PRODUCING COW IN THE WORLD.

The Holstein-Friesian cow, Duchess Skylark Ormsby, the new world's champion butter producer. The results of her 365-consecutive-days' test, conducted by the Minnesota Agricultural College, show that she milked 27,761.07 pounds, nearly fourteen tons, or over twenty-three times her own weight. The butterfat contained in this year's milk yield weighed 1,205.09 pounds, this being a fat percentage of about 4.32.

Figured at cash value, and the dollar and cents estimate is one of the prime reasons for the popularity of the Holstein-Friesian cow, and allowing 35 cents a pound, she produced about \$500 worth of commercial butter. Think of it! More than thirty-five 40-pound tubs! The best previous record for the 365-consecutive-days' butter test was held by Finnerne Pride Johanna Rue 121083. She produced 642 pounds more milk, but it contained 28.62 pounds less butter than the amount accredited to the new champion.

Duchess Skylark Ormsby 124514,

who now holds the world's record regardless of age, class or breed, was bred by R. B. Young of Buffalo Center, Iowa, and is owned by John B. Irwin of Minneapolis, Minn. Her sire is Sir Ormsby Skylark 47010, and her dam is Oakhurst Duchess Clothilde 106988, by John of Barneveldt 35865, a bull that was imported in dam in 1903.

The new champion butterfat producer was born Oct. 31, 1909, and freshened at the age of five years and three days. Throughout the test she was cared for by Axel Hansen, and never missed a feed, never required the services of a veterinary, and was never fed anything but ordinary commercial cow feeds.

Certainly this wonderful "Black-and-White" cow shows an attractive profit on the year's ledger account, for to her production of \$500 worth of commercial butter must be added the enormous amount of skim milk and the value of her calf. It is an achievement which will greatly please all lovers of Holstein-Friesian cattle.

## Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.

## GUERNSEY BULLS

Some very choice youngsters, Gov. of Chene breeding and out of imported dams. Here is your opportunity to increase the value of your future dairy herd.

## DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

AUGUSTINE & KYER,

First St., Seattle, Wash.

## HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

MOUNTAIN VIEW FARM

Mt. Vernon, Wash.

Otto Rundgren, Prop.

## FOR SALE

### Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm

VASHON, WASH.

S. M. SHIPLEY, Proprietor,  
Haller Bldg., Seattle

## RIDGEVIEW FARM

### DUROC JERSEY HOGS

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

SILVER BIRCH FARM  
BERKSHIRES  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3 NEWPORT, WY.



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM

Box 34, Milltown, Wash.

## D u r o c s

Sired by Burk's "Good Enough." Champion at Illinois Fair—Sow Vega Star No. 456070.

Young stock for sale—thrifty and choice.

Write for prices.

MAPLE SPRING FARM

A. R. Beymer, Prop. Vega, Wn.

## PRICES CHOPPED

42.50 51.00 63.50

Four sizes of Galloway Sanitary bath-in-oil separators for 1916 and four new low 1916 prices. Six easy selling plans—cash or terms. These new separators skim from 75 to 80 lbs. per hour. They are built in my great chain of factories from the highest quality materials by skilled workmen and sold to you direct to you at one small profit. If you buy a separator in the next twelve months you should have my

NEW 250 PAGE 1916 BOOK

It tells you how I build Galloway Sanitary separators and gives each of my four new low prices and all my new easy selling plans. A postal gets it. Separators shipped from Waterloo, Chicago, St. Paul, Omaha and Kansas City. Wm. Galloway Co., Box 2123 Waterloo, Iowa



## MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1

Lynden, Wash.

## Fresh Cows for Sale

on terms to suit purchaser, with approved security. All are high grade Holsteins, some fresh now, others coming fresh during the fall. Also some choice young stock. Also Registered Ayrshire Bull Calves at reasonable prices.

F. I. MEAD,

524 California Bldg.  
TACOMA, WASH.

## SUNNY BANK JERSEY FARM

Island Type Imported Jerseys. Great producers, vigorous and strong individuals for heavy dairy work. Young stock of both sexes offered. Prices reasonable considering quality.

HARRY WEST,

Scappoose, Ore.

Please mention this paper when writing.

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. 1.00 price, fresh, reliable, prepared by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct THE CUTLER LABORATORY, Berkeley, California.

## HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,

Opportunity, Wash.

WANTED—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

## RIVERVIEW FARM JERSEYS

Bull and Heifer Calves from Register of Merit sire and dams.

DAVID C. DILWORTH,

Buckeye, Wash.

## AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

## BERKSHIRE PIGS

Prize winning, prolific, rapid growing, pure bred stock at very reasonable price on prompt sale. Full particulars on request.

ALBERT C. HERRE

Route 1 Everson, Wash.



**PASTEURIZATION.**

There are three methods of pasteurization, the "continuous," the "holder," and pasteurization in the bottle.

With the continuous process the milk is heated from 30 seconds to one minute only, usually at a temperature of 160 degrees F. or above.

In the holder process the milk is heated rapidly to temperatures of from 140 to 150 degrees F. and held for approximately 30 minutes after which it is rapidly cooled. This is more effective and superior in every way.

Pasteurization in the bottles is the latest development in practice on a large scale. Raw milk is put into bottles with air tight seal caps, then emersed in hot water until heated to 145 degrees F. and held at that temperature for 20 to 30 minutes. Cooling is accomplished by gradually lowering the temperature of the water until 50 degrees is reached. This is more particularly for the milk trade, and is becoming the general practice.

Pasteurization for creameries is generally carried on by the first or second process and so long as the cream must be gathered from a wide scope of territory and where the sanitary conditions of the dairies are not all up to the high standard desired, pasteurization is the safe and practical way to make the best quality of butter at the creamery under the circumstances.

**Cost of Pasteurization.**

The cost where a good volume of milk is handled by the creameries has been figured as low as three-tenths of one cent per gallon, or perhaps a little over one cent per pound for the butter made. While some creameries in the Pacific Northwest may deem pasteurization a source of extra trouble or expense, yet it pays well because a standard article of manufacture is insured. If both the creameries and dairies would pasteurize, then the country creamery quotations in the markets of 2 cents below "local city" creamery prices could be made a thing of the past.

Where there is a high condition of sanitation in the dairies there is no need of pasteurization for butter making.

Absolute cleanliness is better than pasteurization and the aim of dairymen all over the country should be to attain to as high a standard as possible, but pasteurization is the next best known remedy, and might be undertaken to a much larger extent than is generally done at present and found both practicable and profitable.

**DAIRY HERD IMPROVEMENT.**

In a recent address to a body of dairymen in Whatcom County, Washington, C. S. MacBride, State Dairy Inspector, stated he had observed that there were entirely too many grade and scrub sires for the welfare of the average dairyman. Those who had herds headed by sires of satisfactory ancestral records are making a very fair margin of profit.

Where herds are small and dairymen feel they cannot afford to own a pure bred sire, Mr. MacBride recommends that several neighbors join together and purchase a good animal. This is community breeding in its simplest form, and is an economical way for the small dairyman to avail

himself of the services of a good sire. Good breeding and the grading up of a herd are absolutely essential to advancement in the dairy business.

The popularity of the Holstein and Jersey breeds seem to be about equal, with the Guernseys rapidly becoming one of the popular breeds here.

The breed is a matter of less importance and depends on the owner's taste. Good cows of any breed are money makers, but in breeding up with pure breeds, do not attempt to cross.

**Feeding.**

Continuing, according to the Lynden Tribune, Mr. McBride stated in part, "the question of feeding, especially during the past few months, has been a serious problem. The price of dairy products will not advance much if any above the present prices, and profits in the dairy business in the future will be governed largely by cheaper feeding.

Soilage and silage should and will play an important part in cheaper feeding of the dairy herd. There are approximately 100 silos in the county with many more planned for this year. In this section mangels and roots can be grown very easily. Every dairyman with over eight cows can afford to have a silo. Succulent food is necessary in good feeding and roots and silage furnish this very cheaply. Good feeding is cheap feeding.

There is a great variety of crops used in this county for ensilage, corn seems to be the favorite, and a large number of good yields were had during the past year. 15 tons of silage per acre from corn was about the average yield. Minnesota No. 13 seemed to be the variety of corn more generally used. Clover, oats, oats and peas, oats and vetch and even Canadian thistles gave good results in the silos.

Kale is a good feed but where the herd is larger the labor involved is an item to be considered and the silo probably can be used to a better advantage.

Soiling, either complete soiling or the supplementing of pastures with green feed is being more generally used than ever before, and should be used to a much larger extent. Land worth \$200 to \$400 per acre is too valuable to pasture. Under good conditions only one cow can be pastured to an acre, while with soiling crops three to four cows can be kept very easily.

Clover seems to be the popular soiling crop. A great many dairymen are sowing vetch and wheat or vetch and oats for early spring feeding. By the time this is used the clover will be ready and can be fed until fall. One of the largest dairies in the county did not pasture an acre last summer but fed silage and green clover.

Every year a great deal of money goes east of the mountains for alfalfa. Clover hay approaches alfalfa very closely in feeding value, and with the first crop cut for silage the second crop can be made into good hay.

**CHEESE PRODUCTION IN WASHINGTON.**

Cheese production for the different counties during the year ending June 30, 1915, were as follows:

| County  | Lbs.    | Value     |
|---------|---------|-----------|
| Clarke  | 240,356 | \$ 33,938 |
| Cowlitz | 67,767  | 9,488     |



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

**SKYKOMISH VALLEY HERD****HOLSTEIN CATTLE**

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

**CREAM AND EGGS**

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

**TURNER & PEASE CO.,**  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

**JUANITA STOCK FARM HOLSTEINS**

Home of Margie Newman, the world's record cow, No. 76312, and several world record 2 year old cows. We offer for sale valuable youngsters.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,**  
CHIMACUM,  
WASH.

Kindly mention this paper

**JERSEY HEIFERS FOR SALE**

Have a few registered Jersey heifers and heifer calves as well as young Register of Merit cows to offer at prices far below their value. All high class, prize winning, producing stock.

SILVER BIRCH FARM

Route 1, Box 3

NEWPORT, WASH.

**Cold Storage for Butter and Eggs**

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

**Only \$2 Down**

One Year to Pay!

**\$24** Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 5-1-2 shown here.

30 Days' Free Trial. Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and direct-from-factory offer. Buy from the manufacturer and save money.

**ALBAUGH-DOVER CO. (INC.)**  
2187 Marshall Blvd. CHICAGO

**Increase Your Milk Flow**

Write for Nearby Dealers Name

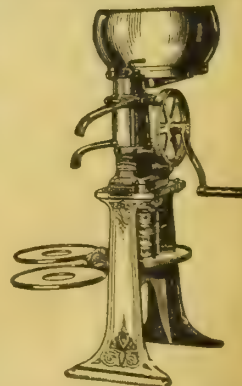
Feed Your Cows

**SHADY BROOK**

The wonderful alfalfa and molasses feed. Hundreds of the most successful breeders and dairymen endorse it. Made by the largest exclusive feed mill in the world.

Send for feeding directions and booklet No. 60

Shady Brook Milling Co.  
Walla Walla, Wash.

**ANKER HOLT**

The inventor of the Anker-Holt Cream Separator, Mr. Anker - Holth, worked for years to get a self balancing bowl. He succeeded. Then he had a skimming device that was interchangeable for on account of being self balancing, it could be put together any way it was picked up. Then he wanted no bother with an oil can, so he invented the Complete Splash Oiling System.

Now he had three very essential features that other separators did not possess, then he tried to get all other points equal or better than others. How well he succeeded, we will leave to you. Just send for descriptive matter or call at the nearest agency and look it over.

Prices lower than other standard makes.

**THE J.C. ROBINSON CO.**  
46 First St., Portland Oregon

**GOOD REGISTERED BERKSHIRES** - Choice pigs, \$10 each at weaning time. W. D. GOOD, Mt. Vernon, Wash.



|                    |           |           |
|--------------------|-----------|-----------|
| Grays Harbor ..... | 58,097    | 7,553     |
| Jefferson .....    | 208,580   | 30,609    |
| Lewis .....        | 5,076     | 762       |
| Pacific .....      | 124,803   | 31,201    |
| Snohomish .....    | 138,685   | 35,709    |
| Whatcom .....      | 221,712   | 38,217    |
| Totals .....       | 1,065,076 | \$187,477 |

### GRASMERE COMPANY JERSEYS.

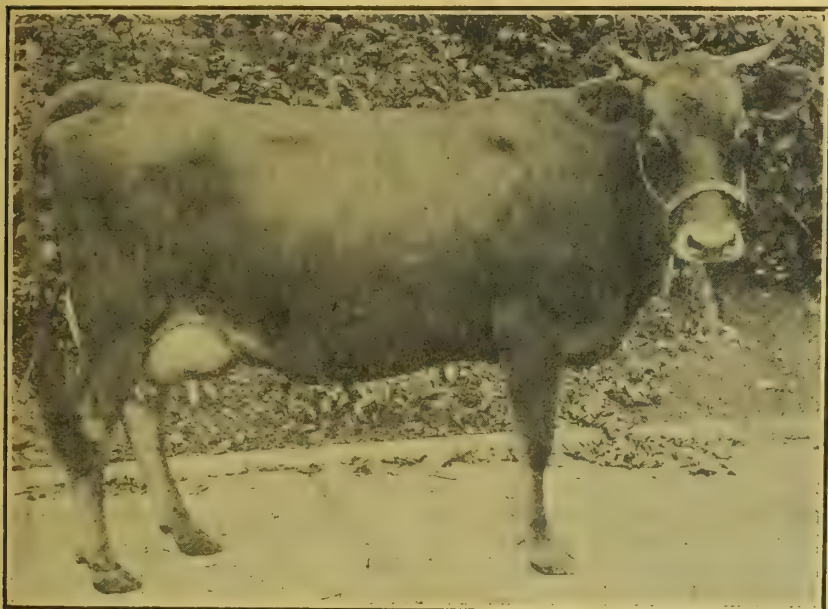
The Jersey breed is again making some gains in popularity in Washington since these cattle are bred with larger frame and of the Island type. The 2-year-old registered cow St. Mawe's Mabel of Grasmere, owned by the Grasmere Company, Chehalis, is making over 2 pounds butter a day. Her 7 day record is 255.9 lbs. milk, testing 5.2. This cow and a sire with high ancestral record are both from the breeding of Ed Cary, Carlton, Oregon. She is a sister of

### She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's *pride*, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club  
370 West 23rd Street - New York City



St. Mawe's Beauty, first prize 2-year-old Jersey at the P. P. I. Exposition, with a record of 534 lbs. fat for 10½ months.

The Grasmere Company is com-

posed of N. B. Coffman of Coffman, Dobson & Company Bankers, who is a leader in the development of the dairy industry, and A. Adolphsen, an experienced herdsman.

## STOCK

### Hog Possibilities In The Puget Sound Country

By Albert R. Beymer, Maple Springs Farm, Vega, Wash.

As a general rule, people in the Pacific Northwest do not realize or appreciate the possibilities of the hog industry that can be developed here.

Quite a number of people who have hogs in a small pen and have bought high priced grain to grow and fatten them will tell you that there is no money in hogs here. Their experiences have kept others from growing hogs, and as a rule, the same bad system is tried over and over again with the same bad results.

But on the other hand, if the proper methods are followed, and the right class of hogs obtained, there is more net revenue from hogs than from any other farm animal that is grown in the Northwest. Most of the logged off lands on the coast are especially adapted to hog raising, and the ground that has the most ferns or brakes is the best place to raise your hogs. A soil that is loose and mellow is better than the gravelly soils, and a very heavy gravelly soil is the poorest of all, for here we want the hog to root and plow up the ground, getting his living more from the roots of the different

plants than from the top growth of them.

As soon as the fall rains set in and loosen the ground, the hogs will make their living almost entirely from the fern roots. The root of the fern is a large, sweet root with a great deal of nourishment in it, and in a soil not too rocky the hogs will gain as much on the fern roots as on alfalfa pasture. When it is dry through the summer the pigs should have clover or other grass pastures to run on.

The best system to obtain this is to slash your brush land in the spring, as soon as the leaves are out; and you can keep slashing until July; then just before the fall rains, or about August 10th, burn your slashings and as many of the down logs as you can, sow red and white clover, Italian rye grass, orchard grass, vetch and winter wheat in the ashes. This is for your next summer's pasture. The wheat will ripen and furnish the hogs grain and will help hold the vetch up where the ferns are not thick. If you have three acres of this you should have twenty hogs, and you should have the land fenced and cross fenced in about one acre tracts, or a movable panel fence to cover a half acre is good. Hogs like a



The milk  
in the pail  
the cow kicks  
over is lost  
forever

AND the butter-fat that goes into the can through the skim-milk spout of a cheap, inferior or worn-out cream separator is just as surely lost as the milk in the pail the cow kicked over. If you are trying to get along without a cream separator, or with an inferior or worn-out machine, you are losing butter-fat right along and butter-fat is money.

## Get Your DE LAVAL Now—Right Away

every day you use it it will be paying for itself out of its own saving.

If you haven't the spare cash right now that need not hinder your immediate purchase.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at time of purchase and the balance in several installments, so that a De Laval really pays for itself while you are using it and getting the benefit from it.

Let the De Laval start saving cream for you right now while butter and cream prices are highest. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

### DE LAVAL DAIRY SUPPLY COMPANY,

SAN FRANCISCO SEATTLE  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Heavy Yeilding Registered Holstein Pontiac and Dekol Breeding

A very large proportion of our cows have A. R. O. records and every one in milking condition is making a very satisfactory margin of profit, records up to 70 lbs. milk per day.

Our entire herd is vigorous and developed for long time profitable dairy work.

From many years' experience we have found that dairying is profitable in proportion as cows of a fixed standard of production are bred and kept in the herd. (For years our sires have been selected with that purpose in view.

The prices bidders at the sales have made when taking over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

### A. E. SMITH CO., Sumas, Wash.

(or White Building Seattle)

Please mention this paper when writing.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,  
Box 56 Underwood, Wash.

### "THE MEADOWS"

Carefully selected Dairy Stock of all kinds for sale. We try to give 100 per cent. satisfaction.

JOHN F. JANSSEN,  
"The Quality Buyer"

E. F. D. No. 5, Seattle, Wash.



change of pasture and will do better if changed every week or ten days from one of these acre lots to another. This gives the grass a chance to grow also, and will produce more and better pasture if this rotation system is followed. As soon as the rains set in the following fall, the hogs will commence to work in the clover and fern roots and will have your pasture pretty well cleaned and rooted up by spring. In the meantime start on another piece of your brush land and it will surprise you to see how much help your hogs will be to you in clearing your land and also you will be surprised to see how easily it is to convert those fern roots into good hams and bacon.

The hogs will also use up all other refuse from the farm, a few barrels should be provided into which all your skim milk and slops should be dumped and filled with water; then put in a half sack of shorts to each barrel of this swill, give two or three quarts of this to each pig morning and night. The more milk you have the less shorts you will need, or an equal amount of barley and shorts is an ideal feed.

#### Preparing for Market.

To fatten your hogs put in three acres of field or garden peas on the land your hogs have rooted up the preceding winter; provided you have the logs cleaned up enough so that you can harrow between the stumps; otherwise use your cleared plow land, select a heavy bearing field pea, or some variety of hardy garden pea. Before the fall rains set in, or as soon as your peas are ripe, fence your field into half acre lots, turn the hogs you have selected for market into the first lot, when they have the peas pretty well cleaned up, turn them into the next lot, and so on through your entire field. Let your stock hogs follow behind and clean up what is left. By the time your market hogs get through your pea patch they are ready for the slaughtering house.

Kill and cure your own hams and bacon, and if you smoke your meat with alder wood, you will have pork that will compete, in the markets of Seattle and Tacoma and other coast cities, with any pork ever raised. I was born and raised on a farm in Iowa, where we thought we could not raise hogs without corn, but I have found out we were mistaken since growing hogs on the Pacific Coast.

The agitation of patronizing home industries should apply to us all, and where, a few months ago, we saw the sign in the window advertising Australian beef and Chinese eggs, should now be advertising home cured pork and home grown products. It is a poor rule that will not work both ways, say we.

#### Good Type.

In selecting your hogs, start with thorough bred Duroc-Jerseys, which is the ideal hog for the Pacific Northwest. They are the most prolific, and are the best rustlers, also they are as quick a growth hog as any. Their type is ideal for hams and bacon produced from field peas, and although they are considered a lard hog, the conditions under which we raise them here make them excel the bacon type hog.

We started our herd from the very best stock we could procure in the alfalfa country. We argued that a hog that could root alfalfa could root ferns, and the alfalfa country produced the best in the world.

Mr. C. F. Burke, of Colorado, Vice-President of the National Duroc-Jersey Association, produces some of the best hogs in the world on alfalfa. His "Burks Good Enough" was the Duroc sensation of 1914, and won

the Grand Championship at the Illinois State Fair in the strongest class of aged boars ever shown. Starting with some of Mr. Burks' best stock, we have built up a herd of Durocs, acclimated and adapted to the conditions found in Western Washington. Although trying out some of the other breeds, we find the Durocs our choice.

By all means do not cross breed, and do not inbreed. The hog degenerates quicker than any other animal, by inbreeding.

The thoroughbred will dress 20 per cent more than the scrub, and this 20 per cent is all profit to you. They are better rustlers, and fatten a great deal quicker and easier, and the average will dress 80 per cent of their live weight. Pigs weaned at six to eight weeks of age should weigh thirty-eight to forty pounds, and the skim milk and shorts slop made richer than for the older hogs, is more essential just after weaning than at any other time. The market hogs should weigh 175 to 250 in nine months.

"Burks' Good Enough," mentioned before, weighed 725 pounds at eighteen months and 960 pounds at thirty months. Young pigs make the most economical gain and the more the hog eats the more net profit he makes for you. Pigs intended for breeding purposes need not be crowded so rapidly as the market hogs. The idea that because the market prefers a hog of about 200 pounds or smaller, that breeding stock need be no larger, is wrong. We find that the most profitable hogs to raise are the ones from large strains. A Duroc brood sow should weigh about 450 pounds and a boar 500 pounds or more. This produces a pig that should weigh 200 pounds at nine months, and as I have said before, "young pigs make the most economical growth."

Clean dry sleeping quarters are most essential to the thrift and health of pigs, the charcoal from the burned logs is eaten with relish and keeps the pigs free from worms. Cholera is almost unknown in Western Washington, as well as most other hog diseases. With this country full of fern roots, it certainly seems that when a man can convert these fern roots into bacon at 25 cents per pound and hams at 21 cents per pound, the hog possibilities in the Puget Sound country are flattering.

#### PREPARING FOR STOCK SHOW.

The National Associations of the East are this year showing greater interest than ever in the Cascade International Stock Show.

Last year, the Shorthorn Association, of which Mr. F. W. Harding is secretary, put up \$1.00 extra premium for every \$2.00 offered by the management of the Show.

This year, in addition to what the Shorthorn Association will probably do, the American Shire Horse Association has already offered two very beautiful silver trophy cups for the Grand Champion stallion and mare, any age, shown at the 1916 Show, also intimating that next year they will be glad to do more. The conditions governing this offer are that the animals winning the silver cups must be recorded in the American Shire Horse Association stud books, and properly transferred to present owners on the record books of the Association.

The National Duroc-Jersey Record Association has also recognized the Cascade International Stock Show and will give some financial assistance for 1916.

tain early maturing pullets, thus securing eggs during the fall, when eggs are usually scarce. The company also has a receiving room for eggs where they are candled, sorted to weight (about 24 ounces to the dozen), packed in cartons, and shipped on contract orders. Their eggs are all guaranteed to be according to grade, they advertise the fancy grades on their cartons and cases, and market prices are paid to the members. Twice a year dividends are paid each member in proportion to the amount of eggs marketed through the company and the time of year eggs were brought in, a larger dividend being paid per dozen for eggs brought in during the fall and winter than for those brought in during the spring and summer, estimated by months. A regular trade is established with discriminating consumers, with city clubs, with the best class of hotels and restaurants, and with fancy grocers for a supply each day or week.

The reputation thus established enables this association to fix its price at several cents per dozen above the regular market quotations, as fancy trade is willing to pay a premium for a guaranteed article. Most egg circles co-operate in buying their chicken feed and other poultry supplies.

#### Attractive Package.

All food products should be delivered in a clean, attractive package. Some of the most successful egg shippers have discarded the dirty wooden case and are using a heavy fiber-board gift case, which will hold from 15 to 30 pasteboard cartons. Each carton has compartments for 12 eggs. Upon both the cartons and the case can be printed such advertising as may be wished. This style of package is especially desirable for the fancy retail grocer who can have his firm name included in the advertising. The fiber-board case is not expensive, forms a good protection to the eggs in shipping, and is worthy of trial.

#### SHIPPING EGGS FOR HATCHING.

After four seasons of experience in shipping eggs for hatching, we have come to the conclusion that there is no container made for the purpose that really fills the requirement as regards hatching eggs. The majority of the packages will deliver the eggs without breakage and apparently in good condition, but in too many cases reports come back that the fertility of the eggs was very low even when the eggs were from vigorous trap-nested hens of tested fertility. We have given this matter considerable thought and have tried a number of experiments that we believe have given us at least a clue as to how to obviate this trouble. We have found that eggs shipped in standard cases would invariably get thru, and without seriously affecting the fertility of the eggs, while eggs shipped in small boxes by the single setting or similar lots, too frequently had to be replaced. There can be no question but that a sudden jar is very prone to be fatal to the germ of the egg or at least to the conditions necessary to permit of its development, without necessarily breaking the egg.

When shipping hatching eggs in cases we leave out one tier of fillers, using a liberal quantity of excelsior in the extra space, above and below. We take the further precaution of only using the alternate spaces in the fillers, placing enough excelsior with each egg to assure that it does not rattle. Excelsior is then placed around the four sides of the filler to assure that it is properly cushioned. We have never received unfavorable reports from eggs thus shipped.

The trouble with the commercial packages, made ostensibly to ship hatching eggs, is that the egg is held too firmly in place in its compartment. Thus a jar received by the container is liable to be communicated to the egg with sufficient intensity to damage the delicate internal structure of the egg. In practically all (we have not found any exception so far) the shipping boxes on the market there is just space

## Sure

That one word sums up the advantages of buying

## UPPER'S LEGHORNS

You're sure that they are bred true to type, SURE of their quality, SURE that they possess constitutional vigor, SURE of their productiveness and SURE of their winning and profit producing ability.

Our matings this year are the best we have ever made.

Our layers for years have been Selected by the Hogan system.

Eggs and baby chicks. Write for prices. I have pleased others—I can please you.

R. R. UPPER Orilla, Wash.  
Please mention this paper

## Salmon Faverolls

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. Better layers than Leghorns, good rustlers and very gentle.

Island Nurseries & Fruit Farm

S. J. Harmeling & Son,  
Vashon, Wash.

#### TRAP-NESTED

## WHITE LEGHORNS

with high Egg Records

Our circular and price list gives both individual and pen records of our flock. Our exceptionally promising matings for this season are fully described in the circular. We respectfully solicit your correspondence in regard to hatching eggs and baby chicks.

Westergaard & Saeman  
BOX H ZENITH, WASH.

## KRESKY BROODER STOVES JUBILEE INCUBATORS

Poultry Supplies and Remedies

#### DAY OLD CHICKS

From fine laying strains of Barred Rocks, S. C. Reds and White Leghorns, and eggs by the setting or thousand. For particulars write

JOHN L. CRAIB

1022 Western Avenue, SEATTLE

## White

Orpingtons  
Rocks  
Wyandottes  
Leghorns  
Pekin Ducks

**HOW ABOUT SOME NEW BLOOD** in the poultry yard. This month we are offering some fine, vigorous white Leghorn breeding cockerels of the famous Barron egg laying strain, specially priced at \$3 each. Mention this publication in ordering.

**Choice Pairs, Trios and Breeding Pens** Write for Description and prices

**ROYAL WHITE FARM**  
Kirkland, Wash.

Box 101, R. F. D. 1, (Near Seattle)  
Mrs. C. M. Whitman, Prop.

enough allowed so that only a small amount of paper can be wrapped about each egg. Now we cannot see how ordinary paper rolled around an egg can make a safe dead cushion for the sides of the egg, though it might be sufficient on the ends where the paper has been more or less crumpled.

The most practical way to ship eggs in commercial egg boxes, that we have tried, is to place the egg box in a basket and pack excelsior in abundance all around the box, though not too firmly. We have had no adverse reports from eggs shipped

## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

#### CO-OPERATIVE EGG CIRCLES

By uniting several egg producers in an association more can be accomplished in these essentials, as portrayed in U. S. Farmers Bulletin 656.

One very successful egg company has a large incubator house with 12,000 eggs capacity, where early chicks are produced for the members at a low cost. This is done in order to ob-



by parcels post when thus packed. We use a No. 2 basket for 15-egg boxes and a No. 3 basket for 30-egg boxes. Shipping eggs in double packages adds considerable to the cost, but under the circumstances is the cheapest in the long run.

We believe that a box can be made that will allow hatching eggs to be shipped without seriously impairing the fertility. The egg spaces in the boxes as at present made are too small. We would suggest that each egg be allowed a space 3x3x3 inches—more or less. The idea is to have sufficient space around each egg to permit the application of plenty of dead cushion material. We shall watch the advertising column of the poultry press and in the meanwhile ship in the ways that we have found satisfactory.

C. WESTERGAARD.

Among the new poultry advertisers in our journal is Mrs. C. M. Whitman, proprietor of the Royal White Farm, near Kirkland, Wash. She is offering White Leghorn breeding cockerels from the famous Barron egg-laying strain. This is an exceptionally vigorous egg-laying strain and generally sought by the egg farmers of the Pacific Northwest.

#### HIGH CLASS POULTRY.

Fred A. Johnson, Tacoma; Miller Bros., Fern Hill; the Evergreen Nursery Co., Tacoma; J. E. Bonnell, Tacoma; Sam F. Hawkins, Tacoma; H. H. Collier, Tacoma; O. J. Stone, Tacoma; G. C. Jazek, Tacoma, were among those receiving special awards at the Tacoma Poultry Show, indicating that their exhibits were of the highest order. It is well to bear this in mind, as new blood is wanted for breeding or when placing orders for chicks. Several of these firms publish a mating list.

#### RED POLL COW CHAMPION.

Jean Duluth Beauty, a Duluth, Minn., Red Poll cow, has a gross earning capacity of \$1,000 annually for milk alone, with an additional \$1,000 for her calf. During the year, Beauty produced 20,280 lbs. of milk, containing 891 lbs. of butter fat. This record makes her champion Red Poll cow for a year or any fraction, beats all Shorthorn and Brown Swiss records, all official Jersey milk records, and has been beaten for milk by only one Guernsey. Why can't the breeders of Red Poll cattle produce a few thousand like her. Large fortunes await them if they attempt and succeed.

#### CATALOGS

Many of our readers have now copies of seed and implement catalogs on hand but those who have not, should send to one or more of the firms advertising in papers at once requesting a copy. Much information of material value may be obtained from these carefully compiled booklets. The leading seed and implement houses spend thousands of dollars annually to obtain the kind and quality of stock which in their opinion will best serve their patrons, for they realize they cannot afford to take chances.

#### NEW 1916 SEED ANNUAL

Illustration of cover design Routledge Seed & Floral Co.'s 1916 Annual Catalog. It contains 128 pages of interest to every Western planter of garden, farm and field seeds, plants, bulbs, roots and nursery stock.

The departments pertaining to Garden and Farm Tools, Sprays and Spray Pumps, Fertilizers, Incubators, Brooders and Poultry Supplies are complete and nicely illustrated.

The Garden and Flower Seed Department is very fully illustrated.

This is really an up-to-date and reliable Seed Catalog issued for the guidance of Western buyers. All readers of this paper are requested to send for free copy.

Special: If you will send, at once, the names and addresses of five or more of your neighbors or friends, who ought to be interested in this new Catalog, and mention this paper, you will re-

ceive free of charge your choice of a 25c packet of Giant Spencer Sweet Pea or Giant Pansy Seeds, or a large trial packet of "Sudan," the new forage grass with pamphlet giving full information.

Address Routledge Seed & Floral Co., 169 2nd St., Portland, Ore.

#### The Aabling-Boyce Seed Co. Catalog.

The Aabling-Boyce Company, Seattle, succeeds in corporate name the Aabling-Bright Company, but the same proprietors who conducted the business last year continue. Their 1916 catalog has front page design in beautiful lavender sweet pea, well performed local work in the execution of this catalog. This form introduced the Sludstrup beet seed into this country, which is now very popular. They have always been very particular about the purity and high germinating test of all seeds handled by them, a fact greatly appreciated by their large list of growing patrons.

#### Pooles Seed and Implement Co.

For the first time in their long career the Pooles Seed and Implement Company have published a very comprehensive catalog describing their seeds, also general farm and poultry supplies. It is replete with helpful illustrated information describing the varieties of seeds and kind of implements best adapted to this part of the Pacific Northwest. It was compiled by Mr. Clifford Pool, the secretary of the firm.

The business of this firm during the past twenty-five years has grown far beyond the needs of the local surroundings, and as a combined seed and implement house is the largest in the Northwest.

Positive satisfaction has always been their motto and their catalogs will be greatly appreciated by their many old patrons as well as by thousands of new customers who can by means of this catalog ship by mail.

#### THE CHAS. H. LILLY CO.

The Chas. H. Lilly Company's 1916 catalog, as usual, is a very comprehensive treatise of Poultry Foods, Bee Supplies, Fertilizers, Spray Materials, Poultry Supplies and treatise of soils. It is a compendium of useful information well systematized for those making an effort to standardize their methods and their products.

Thousands of these catalogs are being mailed to our readers and their neighbors who apply.

#### Portland Seed Company.

The 1916 catalog of the Portland Seed Company comes with an ear of corn for front cover design, significant of their work in supplying good seed corn for silage and other purposes during several years past. This catalog is very complete with illustrated descriptions of seeds and general supplies required by



farmers, fruit growers and poultry raisers. A copy of the catalog will come handy for reference to the farmers during the spring months.

#### AUTHOR PULLING STUMPS

Ernest Thompson Seton, who has made himself famous by his stories of wild animals is much interested in the clearing up of some marsh land on his country place.

In making this improvement it has been necessary to remove a great number of large trees and stumps, and every farmer will agree that this is no small job. To do this work, Mr. Seton used a small hand-power stump puller, which works by means of a long lever, using the same leverage principle as the ordinary lifting jack so that one man can exert a pull of 40 to 50 tons.

In Mr. Seton's work huge trees were yanked out and dragged quite a distance. And stumps with a large mass of earth attached were dragged around quite easily—in some instances as much as 1000 cubic feet earth clung to the stumps.

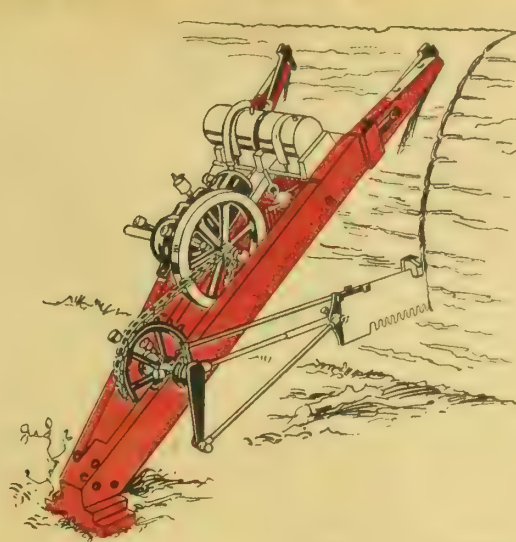
There are thousands of acres of land that are now covered with stumps and brush which could be converted into good pasture or tillable land at a nominal expense when time affords. If you have some land to clear, why don't you investigate? And the added value to your farm will in time count for much.

#### PROSPERITY IN CANADA.

The trade revival in Manitoba, Saskatchewan and Alberta is an actuality and not a myth. There is today a spirit of optimism in the air, just as two years ago there prevailed the opposite spirit of pessimism.

A general trade revival has been felt in every department of business in the

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Prairie Provinces. The agriculturists are in better shape than they have ever been before in their lives. No farmers of any country are in better financial condition and in a more general state of prosperity than are the farmers of Manitoba, Saskatchewan and Alberta. The farmers have harvested a record crop—a crop which enriches them to the extent of something over \$400,000,000.

The trade revival of Western Canada is the happiest feature in the business survey of the whole Dominion for 1915 and in the outlook for 1916.





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Thousands of Dairymen are finding it necessary to remember the important fact that--

## LILLY'S CALF MEAL

is a most important item in their feeding because it **CUTS THEIR FEED BILLS IN HALF.**

There are good scientific reasons for this; first, because we prepare it at a lower cost and because we-not you-thoroughly cook it under 60 pound steam pressure which removes the excessive moisture and at the same time makes it all food, easily assimilated. Lilly's Calf Meal goes much further than ordinary calf meal because it is superior in manufacture.

Many of the largest dairies in the West use Lilly's Calf Meal exclusively.

Dealers sell Lilly's Calf Meal. If yours does not, write Lilly's, Seattle or Portland.

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# NORTHWEST HORTICULTURIST & DAIRYMAN

University of Illinois

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., MARCH, 1916

No. 3

## STANDARDIZE AND ADVERTISE.

Every farm is, or should be, a manufacturing plant. The higher price the land the more necessary it becomes to make a finished, standard article for the market. If it is cream or butter make an article that will score 90 points or above on the hundred scale of perfection and then make known what you have to offer.

Millions of people in states east have spare money to pay for the delicious berry juices which the coast section bush fruits produce in unexcelled quality, but it is necessary that this beverage shall be put up in some standard form so the markets can handle it. It is the privilege of any fruit grower to make something that is good to eat or drink from his orchard crops, put it in attractive form and then gradually develop his market. Too many farmers and fruit growers on the Pacific Coast are waiting for some "big plant" to be started and expect bids for their products. Such condition is too uncertain, and on the other hand, most of the large, successful manufacturing plants have started with very small beginnings. Some experimenting is necessary to make a standard article at low enough cost to afford some measure of profit in its manufacture and the market for any class of manufactured goods is a matter of development and growth.

It is reported that the canned output of blackberries of the Puyallup Valley for 1916 has been sold before the crop is grown. It was several years after canning was started there on a very small scale, before any material market was developed. The association has adhered to standard methods and its manufacture is standardized in form, made known, advertised, year after year increasingly into larger market circles until the reputation of its products is nation wide.

There are thousands of apple trees in the Coast Section from which little or no profit is realized. Don't cut them down except such as are too crowded or out of place, but open the tops by pruning out very thoroughly from the bushy inside branches to admit sunshine and air currents. Work over by top grafting the worthless varieties. If there is no market for fruit of standard size, color and quality then put in a small fruit dryer. More profit can be derived from evaporated apples today than from growing potatoes, and prospects are good for years to come. Of the clean culls make a cider of standard quality. The price of cider has soared skyward and, in fact, merchants say there is none to be obtained. The pea growers in What-



Farmers with 20 or more head of stock who have tried one silo invariably increase the number as required. Those who had silos properly constructed and filled are ahead on feed bills.

com County who have kept their varieties from becoming mixed, cleaned and graded the seed and made known their offerings have continually realized handsomely in net profit margins. There are great opportunities for the vetch, clover and corn seed growers who will produce quality goods and make known what they have to sell.

Whether working individually or through an association the methods employed must be up to standard. When organizing for any specific undertaking it is better to join with one or two others at first than to unite with a larger number holding divergent views. When practical plans for standard work has been adopted and put into practice numerical membership growth becomes an easy matter.

The opportunities before the rural producers of the Pacific Northwest for profit earning, home making and independence are greater today than ever before but there must be some degree of intelligence, thrift and perseverance as foundation to standardize the crops and to let others know about the productions.

### TARIFF ON BANANAS.

The consumption of banas is constantly on the increase in this country and this fruit is in growing com-

petition with our native fruits of nearly all classes, and particularly of the apple. The banana production and trade is owned by a company operating their own boats and it is said their earnings were over sixty millions last year. In an address before the Western Washington Horticultural Association, Mr. J. B. Powels, of Seattle, suggested that as the government is seriously in need of funds to meet operating expenses that some duty might be levied on the banana. The company ought to pay for their great market privilege in this country. The price of our own fruits will prevent the banana people from passing any tariff that is levied on them, on to be exacted from consumers.

### RURAL CREDIT BASED ON RURAL BONDS.

The Washington State Grange recommends that for the purpose of public improvements the states, counties, districts and municipalities be allowed to deposit their bonds with the United States Treasurer and receive in return legal tender currency, receivable for all debts, public and private, and redeemable in twenty years or more with an interest rate of 1 per cent per annum.

That the United States government loan legal tender currency on first

mortgage land loans at not to exceed 2 per cent per annum interest, repayment to be made on the amortization plan. Loans to be limited according to the class of farming in vogue. For short time loans, that postal savings banks be allowed to receive deposits to any amount from any depositor, that 2 per cent interest be allowed depositors, and these funds be loaned on good personal security to reliable borrowers at the rate of 3 per cent per annum and that postmasters be agents of the government through whom applications for loans can be made.

This plan, proposed by Walter Price, of Outlook, Washington, has been taken up by the State Grange to meet the need of cheaper money for public improvements as well as for the individual farmer. The public is now burdened with indebtedness bearing an excessive rate of interest for which high taxes are imposed. The money which eventually will pay off these debts will come from productions of the land, therefore, a system of refinancing should be instituted which will cover long periods of time at low interest rates, or serious losses will occur. In too many cases individuals not having a good foot hold are forced to the wall simply because of an antiquated system of finance which ought to be improved.

Thrift, of course, is necessary for success in the rural as well as in other industries, but with rural credit based on rural bonds the difficulties can be lessened for those trying to get a start, is the opinion of leaders of the State Grange.

### POTATO OF QUALITY.

The Western Washington Experiment station tried out over one hundred varieties of potatoes last year. They have concluded that six of the best kinds out of all these are Netted Gem, Champion, Up-to-date, Multnomah, Early Michigan and Gold Coin. If the potato growers of the upland coast section will pulverize and enrich their ground, grow some one or two of these varieties, then grade the spuds to size and put them on the market, standardized under a distinct brand, the producers can command from two to three dollars a ton above the price of the so-called "Yakimas." The past winter consumers in Tacoma and Seattle have searched the markets for good "home grown" potatoes. In too many cases the tubers were ill shaped and not graded. Consumers everywhere are hungry for good potatoes. Can you grow them, then standardize, fix your brand, make it known and command your price?



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

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A blue cross (X), mark opposite  
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have renewed, sent in names of newly  
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appreciation of the service given  
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often an oversight than wilful neg-  
lect because the item is small. But  
it is the numerous small payments,  
promptly made, which serves to make  
it possible to give readers timely  
and helpful information. The price  
is 50 cents a year, or \$1.00 for 3  
years. "Here's the dollar; well worth  
it," writes one reader, who expresses  
the opinion given by many others.

## COMMERCIAL CLUBS AND FARMERS.

The commercial clubs of the various  
cities throughout the country exist for  
the purpose of business developments.  
Some of them have bureaus, among  
which is one for rural development,  
composed of committees which are to  
represent the business interests of  
the city to get touch with those en-  
gaged in the rural industries.

At a meeting of such committee  
with the local farmers held at Ta-  
coma recently, the wants expressed  
by the rural people included: larger  
and more staple markets, particularly  
for fruits, a better margin of profit  
on the standard products raised,  
money at low interest rates for land  
clearing and other improvement pur-  
poses and in some of the districts  
better roads. A county agriculturist  
was desired on condition that a man  
could be obtained who is competent  
to organize the different communities  
and to give practical instruction in  
the matter of standardization of the  
various products.

The Puyallup and Sumner Fruit  
Growers Association, represented by  
President Paulhamus, offered to con-  
tract and pay 4 cents per pound for  
strawberries delivered at Tacoma, and  
to take all the Royal Ann and Mont-  
morency cherries available in the  
Northwest.

The committee representing the  
commercial club will endeavor to get  
local producers and consumers into  
positions where both can profit, but  
the greatest help will come from de-  
velopment of outside markets and

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

this can only come about through  
the standardization of leading crops  
which are raised in this part of the  
state.

By good team work on the part of  
farmers and the Commercial Clubs in  
the different cities, some good fruit  
juices, dried apples and dairy products  
will reach distant world markets  
within the next few years.

## CONDENSED MILK FOR EUROPE.

American condensed milk is enjoy-  
ing a vogue in Europe that it never  
knew in peaceful times. The ex-  
ports from this country in 1915  
amounted to 76,000,000 pounds, valued  
at \$6,000,000, according to figures  
furnished by the Bureau of Foreign  
and Domestic Commerce, and the  
bulk of these exports went to Europe.  
In normal times the value of con-  
densed milk sold abroad varies be-  
tween \$1,000,000 and \$2,000,000, and  
ordinarily the best customers are  
Cuba, Panama, China, and Mexico.

The increased exports of condensed  
milk to Europe are easy to explain,  
under the circumstances, but there  
has been an increase in imports from  
European countries that is puzzling.  
Italy's recent participation in the Am-  
erican trade has caused some com-  
ment, but the fact that Holland and  
Switzerland sold much larger quanti-  
ties of milk in the United States  
in 1915 than ever before is consid-  
ered more remarkable, for these two  
countries have access to practically  
all markets in Europe. The total  
imports into the United States from  
all countries in 1915 were valued at  
practically \$2,000,000, or one-third of  
the exports, and although Canada fur-  
nished more than half, Holland did a  
business approximating \$800,000 as  
against less than \$300,000 the year  
previous. Switzerland now is selling  
to us at a rate of \$250,000 a year,  
where formerly practically no milk  
came from that country.

## FERTILIZING ELEMENTS.

### Influence on Trees and Plants.

It is definitely ascertained that the  
elements of lime, potash, sulphur,  
phosphate and iron have a greater  
influence on plants, trees and fruits  
than was formerly thought to be the  
case. Lime, best applied in the form  
of ground limestone, exerts an in-  
fluence on the other elements con-  
tained, and on the soil itself. Where  
it has been applied for several years  
past, in certain orchards of the Coast  
Section, the trees are more thrifty,  
more resistant to both insect and  
fungus pests, than are those on  
similar soils where no lime was ap-  
plied. The color, flavor and keeping  
quality of fruit is also greatly im-  
proved with the application of lime.  
Potash gives firmness and carrying  
quality. Phosphate, sulphur and iron  
also seems to influence color, flavor  
and keeping quality.

To what extent these elements can  
profitably be applied is a matter for  
further experiment both at our coast  
experiment stations, on the individual  
orchards and farms.

Progressive farmers are continually  
experimenting with fertilizing ele-  
ments as they realize that a particu-  
lar piece of land requires to be sup-  
plied with any ingredients which are  
deficient, to properly nourish the kind  
of crop to be grown. By applying  
to a small plot then keep accurate  
data of the amount and cost of the

fertilizing elements used, the farmer  
or fruit grower ascertains to some  
degree of accuracy what fertilizing  
elements he should apply from time  
to time. Many are applying ground  
limestone this spring.

## APPLE GROWERS MARKET- ING PLAN.

The Department of Agriculture,  
through Messrs. W. H. Kerr and C.  
W. Moomay, are endeavoring to map  
out a plan whereby the diverging  
endeavors of the fruit growers and  
shippers of the Pacific Northwest  
may become harmonized, so that the  
1916 crop reach consumers, with  
some degree of satisfaction to pro-  
ducers. To insure success it will  
be necessary for the growers who  
control a considerable majority of  
the fruit acreage to act concertedly  
which can only be done by written  
agreements. That involves careful  
signing up work, which should be  
done as soon as possible and unless  
this preliminary business is thor-  
oughly accomplished, the entire pro-  
posed plan of the Department is  
doomed to failure. The temptation  
for private gain is too great to omit  
pressure to bear for withdrawal at  
the critical time, unless the growers  
are united by means of signed up  
instruments.

There are entirely too many asso-  
ciations in the apple districts of the  
northwest. In several cases two and  
sometimes three commissions absor-  
bed between the producer and the  
wholesale buyer. Such a parasitic  
method can only be eliminated when  
the growers are willing to come to-  
gether on a scale commensurate with  
their total tonnage. If the plan pre-  
sented appears practicable growers  
should sign up and if it requires  
modification no time should be lost  
in making any alterations that the  
experienced mind deems necessary.  
Every apple grower in the North-  
west will benefit by the adoption of  
a scheme whereby the producers as  
a body may retain control of their  
product until it is sold. All apple  
growers should get busy, adopt the  
right marketing plan and stay with it.

## FRUIT POLLINATION.

Because of the humid atmosphere  
and cool nights the pollination of  
fruit in the Coast Section is a greater  
problem than in the warmer and  
drier districts. Bees and other in-  
sects are the greatest factors for  
the work. It is essential to have  
different varieties of the same class  
in close proximity. Investigation  
with pears last year indicated that  
the Bartlett, Anjou, Angoulenne, Clar-  
geau and Wilder's early bloom about  
the same time. The blooming period  
here usually covers a week to ten  
days and besides having enough var-  
ieties for the pollen intermixing it  
is essential to harbor some bees.

## BROWN ROT CONTROL.

The control of brown rot of prunes  
and cherries is accomplished by  
means of spraying with a self boiled  
lime and sulphur or Bordeaux com-  
bined with fresh resin fish oil soap  
to make the spray stick and spread.

The Bordeaux is used in 4-4-50  
formula; the lime sulphur 8-8-50,  
with two pounds of the resin fish oil  
soap to each 50 gallons of the mix-  
ture. The first application is made  
just before blossoms open, second  
just after petals have fallen, third  
when husks have fallen and the

fourth about 4 weeks before harvest-  
ing.

The Bordeaux is probably the most  
effective spray.

## TRAINED FARMERS.

It has been definitely ascertained  
that farmers who have been trained  
to do their work systematically  
through the schools or otherwise,  
are capable of producing larger in-  
comes than the uneducated. In one  
district it was shown that the better  
educated man did one and one-fifth  
times as much work as the man  
with less training. He had about  
40 per cent better income, his busi-  
ness was better organized, and he  
kept more live stock.

In the country of Denmark both  
the young and elderly men are at-  
tending the schools and seek to  
learn each from the other. They are  
not afraid of the apprentice system  
and fully appreciate the value of  
"learning how" before entering upon  
their vocation.

In this country the inventions are  
coming so fast the market competi-  
tion is so keen, the profitable farm-  
ing methods are so exacting that  
training for this rural occupation is  
actually compelled.



Four ears corn on one stock.  
Pearsall's Favorite Excelsior, 10th  
crop, Grown by IRA J. PEARSALL,  
Enumclaw, Wash.

Mr. Robert Burt, superintendent  
of agencies for the sale of Weyer-  
haeuser silos, is covering the north  
western states very thoroughly by  
auto and will know every good road  
as far as Wyoming before the season  
is over.

## MR. C. J. STUART.

The passing of Mr. C. J. Stuart,  
Monroe, Wash., from this life, came  
as a shock to his many friends. He  
was at the station to receive Prof.  
Shaw when taken by heart failure.  
Mr. Stuart was a leader in the devel-  
opment, commercially, of the bush  
fruit industry of the Coast Section.  
He understood shipping and trans-  
portation thoroughly and was a lead-  
ing grower, being one of the pro-  
prietors of the Great Northern Fruit  
Company, at Monroe, Wash. He was  
always buoyant, cheerful and helpful  
in all avenues of his endeavor. We  
join with numerous of his friends in  
sympathy to his bereaved family.





Silos on Rented Farm.

Mr. Guy W. Huston, Sunnyside, Wash., though a renter, bought two 10x26 Weyerhaeuser Silos from the St. Paul and Tacoma Lumber Co. in 1914 and filled them with corn in the fall. The silage was fed from one during the winter and from the other during summer and the owner estimated that at least 50 per cent of the hay crop was spared, besides the stock kept in fine condition and the milk flow was better than without the silage in the ration.

These silos are also giving excellent satisfaction so far as keeping the feed in perfect condition is concerned, having now been used three years on a rented place.



SCHADER'S SILO AT SUNNYSIDE.

This 12x30 and a 14x24 Weyerhaeuser Silo was bought in 1914 by E. L. Schader, Sunnyside, and used for half of his corn crop which was rather soft, small ears and would not have cribbed well.

In February the silage in the 14x34 was sold to a sheep feeder for \$600 which about paid for the two silos. The silage in the other was fed to milk cows and young stock with excellent results.

Mr. Schader, from his own experience, finds the silo is a good investment.

#### AVOID NOXIOUS WEED SEED

Few farmers realize how many weed seeds there may be in a sample of seed which is relatively pure, i. e., pure enough to pass legal standards. The law requires alfalfa to be 96 per cent pure. Suppose the impurities in alfalfa, which is 96 per cent pure, consist of 2 per cent inert matter, which is of little consequence, 1 per cent foxtail and 1 per cent dodder seed. Dr. Ira D. Cardiff, director of the Washington Agricultural Experiment Station at Pullman, states that there are approximately 400,000 green foxtail seeds and a million dodder in a pound, which would mean 4,000 seeds of green foxtail and 10,000 seeds of dodder in each pound of this alfalfa seed. Sowing 10 pounds of alfalfa per acre would mean 40,000 seeds of green foxtail and 100,000 seeds of dodder on each acre, or approximately 8 foxtail seeds and 20 dodder seeds to each square yard of ground.

To sow such seed is a crime against yourself, your neighbors, and the agriculture of the state.

Buy only the best seed obtainable. The low priced seed is often the most expensive.

Buy your seed subject to test. It will cost nothing to have it tested.

Pure seed, like pure bred stock, is one of the farmer's greatest assets.

#### TRANSPLANTING NATIVE SHRUBS.

Joel Shomaker, Nellita, Wash.

There is a link of commercial friendship connecting nurserymen and tree planters that should be closely welded and held in high esteem by all connected with the work of making a better world, through the planting, cultivating and propagating of fruits and flowers. That can be accomplished by the people, interested in nature and her products, giving proper attention to the common, everyday rules governing plant life.

One day I noticed two men, on my place, with a mattock, cutting out large, budded rhododendrons from the old root stocks, where a forest fire had burned over the country, several years ago. They said they were plant collectors. After digging several hundred nice specimens, every one budded, but without much roots, they wrapped the plants in bundles, using baling wire, carried them aboard the steamer and departed for the city.

According to reliable information, received from one of the city collectors of plants, these rhododendrons were sold to a wealthy man, for \$15 a hundred. He patted himself on the back and chuckled at the thought of getting such fine plants, for decorating his lawn, at such a low price, and, the men who supply them laughed at how they had separated the man and his cash, so easily, and made a good clean up, of \$25 a day.

Of course not one of the plants collected and delivered to that bargain hunter, lived, and he no doubt decided that all plant collectors, florists and nurserymen were dishonest. He was looking for bargains and the collectors were fishing for suckers, so both should have been satisfied. Yet that man is only one, of perhaps many thousands, holding to the idea that native shrubs cannot be successfully transplanted.

For the past six years my work has



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# and Steel Fence Posts

Big, full gauge wires—full weight—full length rolls woven with a mechanically hinged joint. Superior quality galvanizing—proof against hot sun, sleet and snow. American Steel Fence Posts, cheaper than wood and more durable. Last a lifetime. Hold fence secure against all conditions.

## Sent Free

Write for booklet on how to set posts and erect fence. Every farmer should have it.

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OF TACOMA, WASHINGTON  
With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail

## FARM CURED MEATS

Better—Cheaper

Use your Parcels Post privileges

Also \$2.50 book on curing meats free with each \$10 order.

W. H. KAUFMAN, Bellingham, Wn., R. F. D. No. 2

been that of a plant collector, planter and propagator. I have had practical experience in going into the woods, and on burned over lands, and digging native plants, shrubs and flowers and transplanting them. In different experimental beds, of native rhododendrons, representing plantings of five years ago, and every year since, there are very few vacant spots, as practically all of the plants lived. The same is true of huckleberries, evergreens and natives, taken up and set in experimental plats.

I have collected and transplanted something every month in the year, and have worked under varying climatic conditions, as regards soil, moisture and rainfall. The roots of native plants should not be exposed to the sun or wind, any longer than is absolutely necessary. If the roots dry out between the time of digging and transplanting there is not much hope of their regaining lost vitality, even if supplied with plenty of moisture. I dig the plants with a mattock, shovel or specially made tool, that I have constructed from a barking implement, named a "spudder," by the loggers. The plants are collected on wet days, when the earth is moist, and all of the soil that sticks to the roots is left there for packing.

Collected plants are put in bunches and tied in bundles of ten to fifty, on the spot where collected, then the roots are wrapped in wet moss, and the bundles packed in gunnysacks, for carrying to the packing sheds or

## CORN OREGON Yellow Dent

We have the finest stock of seed corn ever offered on the coast, hand selected and of high germination—ripens well and especially fine for silage or for green feed.

Write for prices. All our seeds guaranteed to comply with all the state seed laws. Also a complete stock of grass seeds, clovers, seed grain, etc. Send us a list of what you want now and get our prices.

## D. A. White & Co.

SEEDMEN

Salem, Oregon

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transplanting beds. Every plant that does not show a fairly good root system is thrown away. No plants are cut from old stumps or roots. Every plant is a seedling, growing on its own roots, and standing as straight as the surrounding will permit. I have discovered that old shrubs have poor root systems, for transplanting, and generally fail to give satisfaction when taken up and reset, even under most favorable conditions.

In transplanting, in beds, I set the plants as close together as they will stand, in rows, cut out with a hand plow, the furrows being a little deeper than where the plants were in the forest seed beds. I put decomposed leaves and leaf mold, scraped up from the earth surface, under maple, alder and other deciduous trees, around the roots of the plants, and partly fill the trenches, before filling up to almost the top with soil. I do not ridge up about plants but leave depressions to catch the rain and other moisture and retain it at the roots of the plants.

If the earth is dry I put plenty of water in the trenches and see that all of the roots of the plants are well soaked and covered with a coating of mixed soil and water, that makes a thick muddy paste. And when the earth is filled in about the plants, I firm down the whole mass of fresh dirt, by pressing it with my foot, being careful also to see that the plants are left standing straight after the firming process is over.

My experience does not favor the pruning of native shrubs or plants when taken up from the original seed beds. That applies well enough to deciduous trees, such as alder, maple and willows, but not to such plants as rhododendrons, madronas, huckleberries, mahonias and similar evergreens. I cut away much of the native spirea roots, as they seem to have a surplus stock at all times, and prime down the flowering currants, salmonberries and wild raspberries, leaving nothing but the roots and something like six inch stems, for transplanting.

Preparing plants for shipment require special care according to circumstances. I pack the roots of plants in wet moss, then cover with waxed paper and newspapers, and wrap in strong mailing paper, all packages sent out by mail, and I have scores of letters, from satisfied customers, expressing their appreciation of the excellent condition in which plants have reached them.

#### BLUE BERRY CULTURE.

The blue berry crop grown wild in Western Washington has become an item of considerable importance as a revenue producer during the past few years.

"Blue berry" as described by the Department of Agriculture, is applied to various species of berries containing many but very small seeds.

#### Growing by Cultivation.

At the present stage of the blueberry industry it is best to begin by transplanting the most promising wild bushes, selecting them for the size, flavor, color, and earliness of the berry as well as for the vigor and productiveness of the bush. These plants can be propagated in various ways, which are described in detail in a professional paper of the department, Bulletin No. 334, by Frederick

V. Coville. The aim of the cultivator should be to secure bushes which will produce large berries. These cost less to pick than the small ones and bring a higher price on the market. A berry eleven-sixteenths of an inch in diameter has already been produced under field culture.

The three fundamental requirements for successful blueberry culture are: (1) An acid soil, especially one composed of peat and sand; (2) good drainage and thorough aeration of the surface soil; and (3) permanent but moderate soil moisture. Next in importance to these essentials is a location such that the berries may reach the market without delay. The best prices are obtained about the beginning of the wild blueberry season. The main crop of wild blueberries comes from the coast section of the North Pacific, coast northern New England, Canada and northern Michigan.

Freezing seldom injures the blueberry plant itself, but the fruit crop is often destroyed in this way. From past observations it appears that wild blueberries growing in or around bodies of water frequently escape the injurious effect of late spring freezes, it seems, therefore a flooding equipment for blueberry plantations similar to those used for cranberry bogs may, under certain circumstances, prove commercially advantageous.

At the present time, however, only a beginning has been made in blueberry culture. The yield and profits in field plantations from improved bushes have not as yet been ascertained. There is, however, one small planting in Indiana where complete records have been maintained for the past six years. This plantation was started in 1889 in a natural blueberry bog, which was first drained and then set with wild blueberry bushes transplanted without selection for individual productiveness or size of berries. On this plantation the yield per acre has averaged 1,741 quarts for the past six years. This average would have been somewhat higher except for the almost total failure of the crop in 1910, due to late spring freezes. An average of 14½ cents a quart has been received for the berries and the net profit per acre is estimated at \$116 a year. In this estimate allowance has been made for interest, taxes, and depreciation. The expense for weeding, cultivation, and irrigation is placed at \$20 an acre and the cost of picking at 5 cents a quart.

#### GROWING SMALL FRUITS.

By C. J. Stuart, Monroe, Wash.,  
Before the Western Washington  
Horticultural Association.

For the past 20 years the writer has been closely identified with the shipping and growing of berries in Western Washington. Have seen during that period, shipments of berries to points West of the mountains, grow from a few hundred cases annually, to almost an equal number of carloads.

Any well drained soil in Western Washington or Western Oregon, that will raise a good crop of potatoes successfully, will grow berries with proper care and cultivation. A well-planned Berry Farm, say of twenty acres, should have all the desirable varieties of berries common to Western Washington, and should plan to plant the kinds that ripen at different



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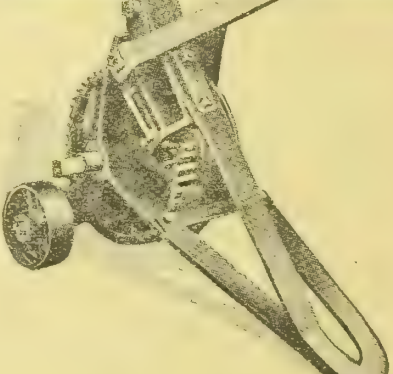
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times, covering a season extending from May to October; such a plan would enable the owner to distribute his labor over a longer period; have a less number of pickers, and a better class, by giving them longer jobs, besides lengthening your shipping season, and giving your customers the different varieties.

On this farm of 20 acres, would plant one acre of Champion of Oregon Gooseberries, in rows and hills five feet apart; this Gooseberry is the only variety that is a reliable, regular and full bearing mildew proof berry that I have ever found suitable for this climate.

Spray them annually in March with lime-sulphur, and again when the blossoms are fading with arsenate of lead, thereby insuring a wormless berry, and free of mildew.

The next planting should be one acre of Victoria Currants; plant them same distance apart, and spray as gooseberries; drive a stake about four feet long, and 3 inches square, at each hill and tie your plant thereto; this will give them an upright growth, and facilitate spraying and picking.

The Victoria is a late blossomer, and in consequence misses the late frosts, is a heavy bearer, as well as a sure one, and the fruit will hang two or three weeks on the bushes after ripening, and does not shell when being picked, as other varieties do.

Plant one acre of Strawberries, I plant the Marshall, but believe the Klondike possibly better, it ripens better at the blossom end, but does not equal the Marshall in yielding; plant in rows three feet 8 inches; in hills 16 inches. I find but little profit in growing strawberries, but must have them to fill orders.

Six acres of Cuthbert Raspberries, plant in rows eight feet apart, hills four feet apart; set posts every 20 feet, nailing a cross piece; say a 2x4 14 inches long, at the top of the post, four feet from the ground, stringing two No. 12 Galvanized wires one inch from the ends of each cross piece; one wire of which to be used for training the bearing canes on, the other to hold in an upright position the new growth.

Weave the canes on the last wire, which will enable the sun to dry the dew on the canes, and allow you to commence picking earlier in the morning.

Follow with four acres of Snyder, Texas, or Eldorado Blackberry, provided that you can get plants from new fields not affected with the blight, or fungus diseases; plant, wire, and handle same as Red Raspberries.

Two acres of Cumberland Blackcap Raspberries, plant and handle same as Raspberries and Blackberries; Blackcap Raspberries are an expensive crop to grow, but they are a delicious and attractive berry, and are good shippers. They bring prices in excess of any other berry.

Two acres in Dewberries, plant in rows eight feet, and in hills 12 ft. apart; posts 12 feet apart; stretch two wires on cross pieces, nailed on posts, same as blackberries, putting cedar or other light wood slats 1x2 inches, 15 inches long, fastening one end to a wire with Poultry Staples, this will enable the slats to be adjustable when removing the old canes, and putting up the new; slats should be placed about two feet

apart; two additional wires should be placed on cross pieces, nailed to posts some two feet from the ground, with the usual slats; this lower wire, to allow the new canes to be trained thereon, keeping them off the ground, and free from injury of the feet of the pickers.

Then plant one acre each of Logan and Phenomenal Berries, seven, or eight feet apart in rows, six feet in hills, posts 20 feet apart; nail one No. 12 galvanized wire on the side of the posts five feet from the ground, another fourteen inches, below, and loop the bearing vines over the two wires, allowing the new canes to grow on the ground; with a little training they can be kept bunched together under the wires, and out of the way of the pickers feet.

This manner of treating Loganberries is new to Washington, was first used in California, and I shall adopt the plan in my fields in future planting.

We now have but one acre out of the twenty left; this plant to Sour, or Pie Cherries, Montmorency preferred; here is a growing demand for them, both in our near-by and distant markets; they should be planted about twenty feet apart, and do not require much pruning or spraying; are almost immune from gummosis.

Such a farm would give the grower almost steady work during the entire year, and by rushing the work, instead of letting it rush you, but little help will be necessary, other than during the picking season.

Berries should have shallow and frequent cultivation during the growing season, keeping down the weeds and grass and conserving the moisture; in other than strawberries, two hoeings during a season would ordinarily answer; stop your cultivation after the berries have ripened, and allow the weeds and grass to grow in the rows, to serve as a cover crop; over cultivation, or rather continuous cultivation is injurious to the land.

Just as soon as you have finished picking a field of berries remove the old canes, and burn them, thereby removing the possibility of your new canes being infected with fungus diseases from the old canes.

I find on close observation that the profitable life of berries is shorter than generally supposed. My record shows that Currants, and gooseberries cease to be profitable after bearing seven crops; Raspberries, six; Blackberries and blackcap Raspberries, five; Dewberries however are an exception; they seem to have a perpetual useful life.

The production of berries on the Pacific Coast seems to have grown faster than the consuming population in our Eastern markets, and in consequence prices are being cheapened, and economy, and vigilance must be practiced.

With a suitable location near a good Association, and cannery I would have no hesitation in recommending the planting of a Berry Farm, such as described above; but as in all other lines of business, capital and experience are two needful things to insure success.

#### FERTILIZING WITH NITRATE.

Using Also As Spray.

The Oregon Experiment Station has been conducting fertilizer experiments in the Hood River Valley,



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Do you know the U. S. Government has shown that the ground squirrels on your place are collecting 34¢ from you every year for each acre of your cultivated land, in what they eat and destroy?

Furthermore, did you know that these little destroyers depreciate land values an average of \$2.74 per acre? Can you afford to pay the toll? Stop it. Get rid of these pests that eat your crops, destroy your trees and vines, and spoil your land. It's easy and inexpensive to get rid of them with Kilmol.

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with some striking results from the use of nitrate of soda.

Prof. C. I. Lewis reports the following results, which we glean through an exchange:

The trees in these tests have been divided into four lots: To the first the nitrate has been applied in the form of a spray; in the second, liquid nitrate was poured upon the ground over the roots; in the third, dry nitrate was spread over the roots; fourth, check trees. The average amount applied was six and three-quarters pounds to the tree. In 1914 the results were strikingly in favor of spraying the material on the trees. But in 1915 the dry and the dissolved nitrate gave fully as good results; in fact, probably the best results came from the dry crystals. The main difference in treatment was that in 1914 the dry nitrate was not applied so early in the season as that sprayed on the trees. Soil chemists have told us that it is a mistake to apply nitrate of soda in late winter or very early spring, as we are apt to lose too much of it.

The experiments in the Hood River Valley show conclusively, however, that to get the best results from nitrogen it must be applied as early as the latter part of February or very early March in that locality.

The check trees averaged 0.9 of a box to the tree; the sprayed trees 10.09 boxes; the trees with the nitrate solution sprayed on the ground 9.97; and those with the dry crystals 10.01.

#### Effect Very Apparent.

The most striking results were secured in the size of the fruit. For instance, in the check plot over seventy-six per cent. of the fruit was smaller than 150 to the box; but where the dry crystals were used only about eight per cent was of this size. The trees on which the spray was used had twenty-four per cent of such apples.

Of sizes larger than 100 to the box

the check plot had only about five per cent; the sprayed trees thirty-three per cent; the liquid on the ground forty-eight per cent; and the dry crystals sixty-eight per cent. In fact, quite a few of the apples on the dry crystal plot were too large. The color was better on the check plot than on the nitrate plots, but one could throw away the over large specimens and the poorer colored specimens from the nitrogen plots and still have many times more of the higher grade commercial apples.

The fertilizer expenses for each tree was only a few cents and the returns were many dollars.

The results in tree growth were striking. The check plots made very little growth and the foliage was yellow, the trees having such a small percentage of fruit that the branches remained upright. On the nitrogen plots the trees were so green that one could notice the difference over a mile from the orchard. The leaves were larger and cleaner and the trees so loaded with fruit that they bent to the ground. For example, the best yield on the check trees was only about four boxes to the tree, from the nitrogen trees there were twenty-one boxes to the tree.

Another very striking result was the effect of nitrogen on the setting of fruit. Wherever nitrogen was used in the various orchards the percentage of set was much larger than where it was not used.

The results at Hood River show that it is not wise to put the nitrogen on two years in succession, but that one year, at least, should elapse between applications. When the irrigation of clover or alfalfa is to be practiced nitrogen can probably be used two years in succession, since it is often noticed that the trees do not do so well the first year they are in clover as they did formerly. The addition of a second application of nitrogen would probably overcome this slight check which the trees often receive.

## Planting and Raising Silage Corn

By C. J. Zintheo, Agricultural Engineer.

There are yet some farmers who are of the opinion that silage corn can not be raised in Western Washington. Their reasons are: Nights are too cold; days not hot enough; the season too short; not a corn country; soil not adapted for corn; have frost in July; has never been done, and I don't know how.

For those who are satisfied to go on farming in the old method and trade their milk checks for feed checks this article will be of no interest, but to the farmer who begins to see that he can not succeed unless he raises his own feed and has been convinced that the silo is the only satisfactory method of conserving the summer feed for a winter supply this article may be of some benefit.

Corn is not the only crop adapted for the silo, as any succulent feed may be preserved in the silo, but corn gives the largest tonnage per acre and it makes the best silage, as it is a carbohydrate, which, with alfalfa or clover hay make a balanced ration.

I can furnish seed from corn that has been matured in Western Washington for the last ten years, so this ought to dispel the notion that corn will not mature in Western Washington.

During the last three years a great deal of corn has been raised for the silo in practically every country, and I have yet to learn of any one who has adopted intelligent methods who has not succeeded in raising a good crop of corn. For those who "don't know how" but are willing to try the following methods should be a guide to success.

#### Selecting the Seed.

It is not too early now to select the seed for the silage corn, as a great deal depends upon the right kind of seed. Seed matured in Western Washington should prove the most satisfactory as far as germination is concerned, for that reason it is advisable to try to get some locally matured seed. It should not be forgotten, however, that the longer seed has been matured locally the better developed will be the ear, but the shorter will be the stalk, and as tonnage is what we are after in silage corn, it is not advisable to plant all locally matured corn, as the yield



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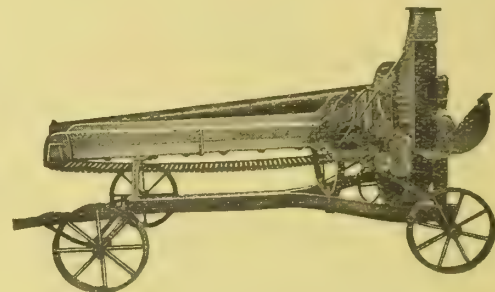
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in fodder may be disappointing. Eastern Washington holds the record for raising the largest number of bushels of corn per acre. At the corn show held at Dallas, Texas, three years ago, corn raised at North Yakima took the first prize, beating all the corn states entered in the contest.

Last year corn was raised near Granger, Washington, that yielded 115 bushels of matured corn per acre, and yielded 40 tons of corn ensilage per acre. This corn has been matured in that section for the last ten years and it ought to make good seed for silage in Western Washington. I can furnish some of the seed for those who wish to try it of other varieties. The "Pride of the North," matured either in Oregon or Northern Minnesota has proven a very good variety of ensilage corn, and during the last two years has yielded as high as twenty-five tons of ensilage per acre in Western Washington.

The above varieties are all yellow dent corn; other varieties are King Phillip, White Cob Ensilage Corn and Bloody Butcher. Whatever variety is chosen should be purchased early as choice seed is going to be hard to obtain.

#### Testing the Seed.

After the corn has been selected make sure that it will germinate properly, as a great deal of corn last year, especially in the East, did not mature properly and is therefore low in vitality.

Again, corn that has not been properly dried out after it is picked, but has been allowed to get moldy has lost its germinating power and will not grow. The easiest way to determine the germinating power of the seed is to select a few kernels and put them between some damp cloth in a warm place, letting them remain for a week or more, adding warm water to keep the cloth moist. The top cloth should then be removed and the number of sprouted kernels counted. By comparing the sprouted with the non-sprouting kernels the percentage of germination may be obtained. If the corn does not germinate over 90 per cent it should be rejected as not being fit for planting and corn should be obtained from a more reliable source.

#### Preparing the Soil.

Great care should be taken in selecting the land in which to grow the corn. It has been found that land that last year was planted to root crops, kale, potatoes or other cultivated crops is not suited for planting corn. It is best to select a piece of land that has been in sod for several years and which needs cultivation to bring it back into fertility. This should preferably have been plowed in the fall to allow the sod to rot, but if this was not done plow very early in spring, about six inches deep. If plowed in the spring it is best to give the sod a top dressing of manure with the manure, spreader, about ten loads per acre, then disc the sod thoroughly in both directions before plowing. After plowing, the ground should be disced again several times, followed with a spring tooth harrow and pegtooth harrow to put the soil in first class condition before the corn is planted.

#### Planting the Corn.

The land in most cases being uniformly fertile, the corn should therefore be planted uniformly so that each stalk may have a certain zone from

which to draw its fertility to develop a fully matured stalk of corn with one or two good ears on it, and as few suckers as possible. This can best be done by the use of an edge drop planter which plants the kernels in drill rows, one kernel in each place and equal distance apart in the row.

The edge drop planter differs from the round hole plate planter in that the round hole plate permits two, three or four kernels to drop through the hole at the same time.

When too many seeds are deposited in the ground at one place and all try to develop a stalk from the same source of soil fertility the result is that neither stalk has the opportunity of full development and the silage corn is spindly, short, full of sap and plenty of suckers, but few full ears.

In order to obtain the best results the seed should be bought in the ear and the tips and butt kernels removed as these are irregular in shape and do not fit in the edge drop cell. If the seed is bought shelled it should be gone over and all irregular kernels removed, planting only the large uniform kernels. Hand picking the corn pays well for the time expended.

The time to plant the corn varies somewhat with the season. I have known people who have planted corn as early as April 1st, and others have planted it as late as June 15th, but on an average May 15th is usually the best time to plant corn in Western Washington.

Corn planters are either one or two row machines. They should be set so as to plant the rows three feet six inches apart, and the kernels ten inches apart in the row to obtain best results, and biggest yield.

#### Cultivating the Corn.

The corn should be planted about three inches deep. After the corn has been planted the ground should be gone over with a light smothering harrow with the teeth slanting backwards. This can be done even after the corn is up above the ground two or three inches without injuring the corn.

This harrowing eradicates a lot of young weeds and makes the cultivation of the corn easier later on.

When the plants are about five inches high the cultivation of the corn between rows should begin and it should be continued at least once a week for two months, or until the corn is too tall for further cultivation. After the second cultivation the corn should be gone over with the hoe, cutting out such young-weeds between the stalks in the row as cannot be reached with the cultivator. The best kind of cultivator to use is a combination riding and walking cultivator, with three shovels on the side and spring trip on the shovels, which prevents breakage in case a stump or a rock is struck. Use the handles and walk during the first two cultivations so as to get all the young weeds that are close to the plant. Afterwards riding is preferable and the cultivator is so made that the shovels can be controlled by a slight movement of the body from the seat. Attachment can be furnished for this cultivator that can be substituted for the shovels and used for shallow cultivation during the last two cultivations to prevent the disturbing of the roots of the plant, which by that time cover the whole

## PLANT Walnut Trees

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SHRUBS.

Thus you can enhance the value of your place by a little attention to nut growing and ornamental planting. This may be brought about at a surprisingly small cost in proportion to the actual value afforded. Here are some of the select varieties—

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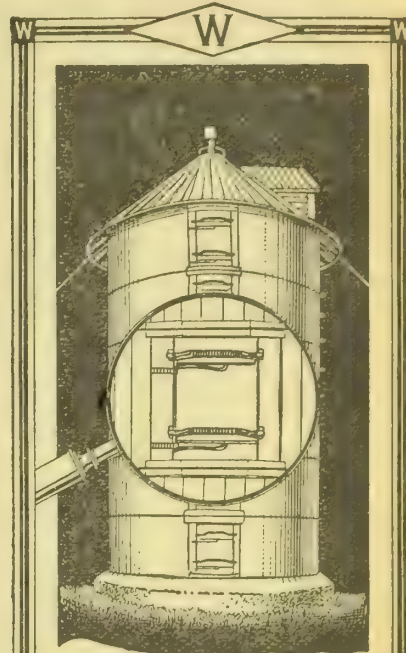
Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

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space between the rows, almost to the surface.

The object of so frequent cultivation is not only to kill weeds but to conserve the moisture in the ground, as by this means the capillary tubes in the soil, through which the moisture escapes, are cut off forming a surface mulch and retaining the moisture.

Cultivation should always be resorted to after a rain, as this will break up the crust formed by the rain through which the moisture passes rapidly during the warm days that follow.

#### Harvesting the Corn Crop.

There is a great deal of difference of opinion as to when is the proper time to cut the corn for the silo. After the tasseling period, when the ear begins to form, the corn plant draws a great deal of nutriment from the ground in the form of juice. This is converted in the plant into sugar, and by further development it changes into starch, and the circulating proteins are built into the kernels of the ear.

If the corn is cut too early before the ear is fully developed the stalk has too much juice in it which is easily pressed out and lost. When we consider that this juice contains all the sugar, three-fourths of the nitrogen, necessary salt and other extractives we can appreciate what this loss of juice means, and, furthermore, immature corn has more sugar which turns into acetic acid or vinegar and sour silage is the result. On the other hand, if the corn is fully matured so that the ear has become hard, practically all the nutriment has been taken out of the stalk and when the corn is cut with an ensilage cutter the ears are cut into nubbins about an inch long. These nubbins are liable to go through the cow without her getting the nutritive value out of them. Therefore, if the corn is cut just after the ear passes the glazing stage and the kernels begin to dent, the nutritive elements in both the stalk and the ear have become stable and less liable to be broken down by fermentation and a sweet easily digestible silage is the result.

In Western Washington there is very little danger of getting the corn too ripe, but if a frost should come before it is ripe enough some hay or straw should be cut with the corn in filling the silo. This will absorb the surplus moisture and prevent the silage from becoming sour. In harvesting the corn crop for the silo the hand method of cutting and gathering the corn by hand is both tedious and expensive. The corn binder is proving the only satisfactory method of cutting the corn and if one can not afford to buy one he should arrange to hire one, as it soon saves in labor and convenience what it costs for the use of it.

Usually corn that is planted the middle of May is ready to harvest the middle of September to October.

Care should be taken in cutting the corn for the silo to cut it not more than an inch in length, and be sure that the knives are sharp, so that it cuts the stalk clean, instead of shredding them, as this does not make good silage. Another point of importance is to see that the silo is absolutely air tight. This can easily be secured by purchasing a factory made stave silo with proper adjustments to keep it tight. See to

it that the doors are properly closed and pitch put on the edge of the doors to make them absolutely airtight. The silage should be packed thoroughly in the silo. This can best be done by using a blower silage cutter with a filler tube on the inside. The man in the silo takes a hold of this distributor, walking around the silo he distributes the silage around the outer edge, tramping it down as he does so, then gradually filling the center.

By following these directions the farmer is sure to raise a good crop of corn ensilage of from twenty to twenty-five tons per acre.

When the corn crop has been removed it is advisable to immediately plow the land and plant a crop of spring vetch and winter wheat, sowing with it clover and rye grass. This will produce a crop of silage the following spring in May, and pasture for the rest of the summer.

By this method you have renovated a poor piece of pasture land, taken two crops from it of about twenty-five tons of corn ensilage and fifteen tons of wheat and vetch ensilage in the same year. You have put your land back into grass again and in good shape for good yields. You have provided both summer and winter silage for your stock and you have saved money on your feed bills, and increased your milk supply.

Next year take another piece of pasture land and follow the same system until all of your cultivated land has gone through the rotation.

#### PRICES OF FARM PRODUCTS.

The level of prices paid producers of the United States for the principal crops increased about 8.4 per cent during January; in the past eight years the price level increased about 3.2 per cent during January. On February 1 the index figure of prices was about 0.4 per cent lower than a year ago, 5.9 per cent higher than two years ago, and 9.0 per cent higher than the average of the past eight years on February 1.

The prices of meat animals (hogs, cattle, sheep, and chickens) to producers of the United States increased 3.4 per cent from December 15 to January 15; in the past five years prices increased in like period 1.3 per cent. On January 15 the index figure of prices for these meat animals was about 1.7 per cent lower than a year ago, 8.4 per cent lower than two years ago, and 1.3 per cent higher than the average of the past five years on January 15.

#### SUDAN GRASS.

Sudan grass was discovered because of a search instituted by the United States department of agriculture for the purpose of finding a hay plant without a troublesome root stock. This grass was finally located in the Sudan regions of Africa and took its name from the source, although it is scientifically called "garaevi" of the sorghum family.

It was on March 16, 1909, that one-half pound of the seed was received and planted at a government seed station, and from this has come the seed that now exists in this country, says Prof. Geo. Spoerry, of Troy, Montana, in the Campbells Scientific Farmer.

Sudan is very closely related to the cultivated sorghums and hybridizes very freely with them. The consensus of scientific opinion is that it is

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If you have the location and soil, what can you plant with a more promising future?

Our own trees from our own scions. If you are interested, write us.

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If planted now you should derive good results.

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PASADENA, CALIFORNIA

#### SEED CORN

Wonderful White Dent Ensilage Corn, acclimated in Western Washington; 8 to 11 feet high, matures early in September. Price, postpaid, shelled, 20c per lb; 10 lbs., \$1.75; 10 ears, \$1.00.

**T. McCLINTOCK,**  
Burley, Wash.



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This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.



the progenitor of the sorghums. It very closely resembles Johnson grass, yet it is entirely distinct from it. The panicle is a trifle larger and more compact than is that of Johnson grass, but its chief difference lies in the absence of root stock or underground stem. Sudan, like the sorghums, has only a fibrous root.

It stools very freely, in fact, it has been stated by good authority that as many as a hundred stems have originated from one seed; and while I believe this, I cannot say that it is true. I can state, however, that I found seventy-two distinct stems arising from one seed. This feature makes it highly valuable as a hay plant.

Sudan, like other sorghums, does best in a warm climate and as many as four cuttings have been secured under favorable conditions in one season from one planting. Two, however, are as many as can be expected in this latitude, but the grass will attain a height of from three and one-half to four feet without irrigation (and considerably more with it, so it is reported) at each cutting and the stocks will be small and very tender and exceedingly sweet and palatable, making one of the finest of stock foods.

It cannot do well in all localities, but tests throughout the northwest have shown it to do very well, in fact, much better than was supposed. It seems to do best as a hay on moist, rich loam, but does not mature for seed so well. The land upon which I raised my crop was a sandy clay loam, on a bench about two hundred feet above the river bottom, had never been fertilized, except where the droppings from the horses fell as they were plowing, and in these spots the grass stood up on an average of eight feet, while the average of the entire field was about five feet eight inches.

To give a fair idea of what Sudan will do, I would state that it was raw stump land and I blew out the stumps cleared the land and burned the underbrush during April, 1915, immediately plowed it (about eight inches deep), harrowed it twice and seeded it on May 11, 1915, broadcast sowing, 100 pounds of seven and three-quarters acres. I left seven and one-half acres stand for seed and cut the balance July thirtieth as a first crop of hay. This came on immediately, and on September first when the seed was mature, the second crop on the hay plot was again ready to cut.

The spring and early summer was exceedingly cold and the grass seemed to come up and stand still. I became disgusted and prepared to cut it once and give up raising seed and see if the second crop would grow faster, but it turned warm, and during the last half of July I could fairly see it grow from day to day. It kept on growing till about August tenth and seemed then to have reached its greatest height and from this time until I cut it seed was maturing.

Sudan does not mature evenly, in fact, some stems will bear mature seed while at the same time new stems will be coming from the green stool and there is every graduation between these two extremes, so that one must use his best judgment and cut it when he thinks the older panicles are about to shell out and the greatest number are mature.

The latter part of the summer from

July fifteenth to September first was exceedingly hot and dry, but drought does not affect it, which is another worthy point in its favor.

I did not have seed enough to sow it as thick as I should have, and I shall drill it in by all means next year. Seed should be sowed at the rate of from 20 to 24 pounds broadcast to the acre and about 15 pounds if drilled in.

Under these adverse conditions I threshed 3,052 pounds from the seven and one-half acres, which will net me about \$1,200.00.

### THE "WHY" OF GASOLINE PRICES.

Supply of crude oil increasing .6 of 1 per cent; consumption of gasoline increasing 27 per cent. Put very briefly, this is the why and wherefore of the advance in gasoline prices. It is the working of the inevitable law of supply and demand. In California oil fields last year, there was an actual falling off in crude oil production of over 14,000,000 barrels. The United States Geological Survey shows that the total 1915 production of crude oil increased only .6 of 1 per cent over that of the previous year. And yet 500,000 automobiles were put into use in the United States in 1915 and increased the gasoline consumption, for automobiles alone, fully 27 per cent over the consumption in 1914. Meanwhile thousands of gasoline engines and tractors are being put into service on our farms and ranches and depleting the available gasoline supply.

The January issue of the National Petroleum News—the organ of the Independent Producers—estimates that at least a half million new automobiles and trucks will be sold this season, so that in a few months not less than three million cars will be consuming gasoline. That will require a 30 per cent increase in gasoline production in order to maintain even the present balance between supply and demand.

Thus far this year production has run considerably less than normal. Just as was the case last year the United States Government suits against operators on unpatented lands is greatly limiting production and the severe January storms which wrecked hundreds of rigs in the California fields has further retarded production. The California State Mineralogist estimated a daily average loss in production of 40,000 barrels as a result of this storm damage.

Improved carburetors and improved methods of refining petroleum undoubtedly relieve the gasoline situation from time to time, but in the final analysis the price of gasoline will be determined by the way the country's crude oil supply keeps up with the ever-growing demand for gasoline. Just at present nature and the Government are combining to limit the supply. Time may change all this and in the meantime we of the Pacific Coast can congratulate ourselves that we live handy to the California fields, where oil is still flowing fast and where we get prices that are still several cents a gallon below the Eastern average.

### POWDER CLUBS.

Dr. H. K. Benson, chemist in the University of Washington, Seattle, addressing a body of real estate men recently told them that the land holders and financiers must join with the men on the land and furnish money for clearing purposes. The land which could profitably be reforested should be set aside and protected for that purpose.

"We have 1,500,000 acres of logged-off land that should be reforested. If the private individual or association undertakes reforestation, the undertaking soon comes under the eye of the assessor, and forthwith begins a process of taxation assessment that by the time the stand has reached ma-

# SUDAN SEED GRASS

Write for price, stating quantity wanted.

It takes from 10 to 12 pounds to plant an acre.

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We supply it in any quantity from 100 pounds to ton or car-load lots.

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Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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It is important that every seed planted has strong vitality and that the entire quantity used is pure. "Highest quality," our motto

for more than a quarter century, has established absolute confidence. We offer this year very choice seeds of vetch, clover and other grasses, corn, kale, marrow cabbage—grain, field, and complete list of garden seeds. Our new catalogue, a practical guide, is sent free to those who send in their names at once.

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1507 Pacific Ave. Tacoma, Wash.



turity has eaten up the profit. We must either devise legislative protection against taxation for such undertakings, or the state itself must do the reforestation. I regard this as a distinct challenge to the citizens of Washington.

"In the matter of clearing the logged-off lands suited to agriculture, the policy to be pursued is one of proper organization for private enterprise. Under present conditions, the farmer with mortgageable property can get money for land clearing at 8 per cent. That is prohibitive. Without such property, he cannot borrow money. Now, it takes, at 8 per cent on money, \$2,400 to pay the powder bill for clearing 40 acres of land. Powder is what interests the farmer. He is not struck by suggestions for by-products and experimentation.

"Organization of the farmers and their needs on the one side and of finance and its prospects on the other, followed by a joining of the two, is imperative. There are registered successes in similar enterprises. Irrigation districts have been formed. Cow clubs are established facts. Why not powder clubs? I recommend powder clubs first and cow clubs second."

#### BARN YARD FERTILIZERS.

In feeding one ton of corn there is approximately a fertilizer value of \$5.25. Wheat bran \$10.15; oats \$6.45;; cotton seed meal \$19.81; linseed meal \$18.73; oat straw \$3.07. Alfalfa has also a high manurial value. The benefit of these fertilizers are within reach of farmers who feed and are exercising care in the handling of them.

The liquid portions of the manure contain about three-fourths of the nitrogen and nearly all of the potash voided by the animal. Therefore, it is highly important that as much of the liquid manure be saved as possible. This is usually accomplished by using a sufficient amount of bedding to absorb it, or by allowing it to drain into a pit or cistern of some sort. Spreading manure while fresh is generally most economical. Where this is impractical, it should be stored under cover or in a concrete pit, and always kept well packed. "Fire-fanging" can be prevented by keeping it quite moist.

Aside from the fertilizing elements contained in manure, it has beneficial mechanical effects upon practically all soils. When properly applied, manure improves the physical condition of the soil by increasing its water holding capacity, aeration, and temperature. While the soluble portion of the manure is at once available for plant use, other plant foods are released as decomposition continues for two or more years. This latter process assists materially in rendering available for plant use the potash and phosphoric acid which are already present in the soil, but in unavailable forms.

The U. S. Department of Agriculture suggests that when the farmers of our country thoroughly appreciate the actual amounts of fertilizing constituents which are contained in farm manures, and intelligently care for and utilize the manure produced on their farms, they can save millions of dollars in fertilizer purchases; and the necessity of depending upon the purchase of these fertilizers, followed by the occurrences of crises in

the fertilizer situation such as now exists in some sections, will be largely decreased.

Berry growers throughout the coast section of Washington require a considerable amount of potash, together with the nitrogenous and phosphoric elements for their fields. When they combine poultry raising with fruit growing and buy wheat to feed the poultry, they can supply a large part of the required potash by carefully conserving the poultry manures. The fertilizer question becomes more important as the growers endeavor to increase the yields on a given tract of land.

#### OAT SMUT PREVENTION.

The average annual losses from smut in oats are greater than those caused by any other preventable cereal disease in the United States. Treating the seed with hot water or with formaldehyde solution before sowing is an easy, cheap, and effective way of preventing this disease. The latter method, which is the one most available for general use, is here briefly summarized. Both methods are described in detail in Farmers' Bulletin 507, which will be sent free on application to the Secretary of Agriculture, Washington, D. C.

Mix the formalin (a commercial preparation which is 37 per cent. formaldehyde by weight) with water at the rate of 1 pound (a little less than a pint) to 40 gallons of water. The grain may be either loosely inclosed in sacks or put loose into a tub or vat with the solution. Agitate the sacks or stir the loose grain occasionally so that the entire surface of every grain will be thoroughly wet. Instead of being immersed the seed oats may be spread on a clean floor or canvas and sprinkled with the solution and shoveled over during the process so that they will be wet evenly as in the other method. Not over a gallon of solution will be needed for every bushel of dry grain. After sprinkling, shovel the seed into a pile, cover it with sacks wet with the solution, and allow it to stand for at least two hours before spreading it out to dry.

Precautions: The oats may be seeded as soon as dry enough to run through the drill. If the seed is still moist, however, the drill must be set to sow more to the acre than if it is dry. The quantity which should be sown may be determined by measuring a given bulk before and after treatment and figuring the proportion of increase. After treating do not expose the seed to freezing until it is thoroughly dry.

Do not allow the treated seed to come into contact with old sacks, bins or machinery in which there may be smut spores. If such must be used, scald them or wash them first with the formaldehyde solution.

#### GROW SEED CORN.

The demand for seed corn is sure to increase year by year in the Pacific Northwest, for the reason that corn silage will become a large part of the feed for dairy herds, both in the Coast Section and in districts east of the Cascade range.

Records of 149 bushels per acre in each of these districts is a sure indication that the production of corn silage will become a leading factor in the feed problem.

For one reason or another only a

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NILES, CALIFORNIA

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It's poor business, Mr. Farmer, to put in your time and toil, tilling soil and then take a chance on *nameless* seeds.

You know what the name "LILLY" stands for, uniform quality, thorough methods of seed testing, strict field supervision and the most careful selection of strain.

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Our catalog is arranged for the purpose of giving this information, and it is sent free on application. Many of our patrons are using it as a guide to their entire satisfaction. Send for a copy today.

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few farmers will select their own seed. Good seed raising requires some degree of skill and previous preparation, both of which are usually well rewarded. Then if a certain crop of seed corn is not all sold one year it can be kept until the next, or even for the third year if stored in a dry place. Home grown acclimated seed is almost certain to give better results than imported seed.

Get some seed of the early maturing varieties which produce a good proportion of grain in comparison with the amount of stocks, then prepare to take good care of the seed at the proper time. There is a good prospective market with a handsome margin of profit awaiting the careful seed grower.

### CORN YIELDING 149 BUSHELS PER ACRE.

Grown by a Boy on Irrigated Land.

The highest yield of corn per acre reported at the O.-W. R. & N. Annual Corn Show, held at Walla Walla, Wash., December 2, 3 and 4, 1915, was made by J. B. Boyer of College Place, Wash.—149 bushels of shelled corn, 56 pounds to the bushel. The next highest was by George L. Hartman of Prosser, Wash., with a yield of 131½ bushels. Edward Starkey of Bigham, Wash., had 121½ bushels. There were over a dozen that had yields of over 100 bushels per acre. These yields were all certified to by disinterested parties.

The following is J. B. Boyer's story of how he grew his corn:

The first important thing in corn growing is the selection of seed. The selection should be done in the field. In this way it is easy to select the largest and most perfect shaped ears. I always choose my seed corn from stalks which bear two or more good ears. The ears should have good deep kernels and small cobs. I keep my seed corn in a heated but well ventilated room until thoroughly dried. Then I store it in a dry room.

In preparing for a corn crop I plow the land deep. The deeper the better. Then I harrow it thoroughly right after the plow. To retain the moisture, I harrow it until it is loose, mellow and free from clods; then I furrow it out in rows three feet apart. Use a single shovel in making the furrows; plant in the furrow, covering about two inches deep.

Making the furrow deep gives me a chance to harrow my land deep, and work the soil in around the young plants until it is large enough for the cultivator. It also helps to hold the

moisture, as in planting this way you don't get such high ridges to your corn. After the plants are four or five inches high I begin cultivating with a one-horse cultivator. I cultivate once each week until the corn is tasseled. The more you cultivate your land, the more moisture it will hold. I have noticed that the land which is cultivated most always produces the most corn per acre. I try to irrigate my corn directly after I give it the last cultivation. Corn should be irrigated often during the latter part of July and August.

I do my planting between May 1st and May 10th. This year I planted about May 5th and 6th. I plant yellow dent corn for my main crop. I find that it out-yields any other variety I have ever grown. This makes the third year I have planted this variety. The first year I planted it, it yielded between 70 and 80 bushels per acre. Last year my yield was better. This year it yielded over 149 bushels per acre. I planted it on slightly better land this year, which would make some difference, but it naturally improves every year.

As I have no silo, I cut and shock my corn. The fodder makes very good cow feed. I husk my corn early in November and sell all except what I want for my own use. This I store in a well ventilated room.

#### Location and Character of Soil.

The land is located three miles southwest of Walla Walla in College Place.

The soil is a heavy black loam.

The size of plot is one acre, 10 rods by 16. This is a part of a general field of about three and one-half acres.

The cost of labor in hours in preparing ground and cultivating, harvesting, etc.:

1. Plowing the land ..... 4 hrs.
2. Harrowing the land (before planting) ..... 2 hrs.
3. Furrowing, planting and covering of corn ..... 5 hrs.
4. Harrowing after planting, twice—1 hr. each time.. 2 hrs.
5. Cultivating corn with cultivator 6 times—3½ hrs. each time ..... 21 hrs.
6. Cutting out weeds and pulling off suckers ..... 3½ hrs.
7. Irrigating of corn ..... 3 hrs.
8. Cutting and shocking of corn ..... 20 hrs.
9. Husking of corn ..... 30 hrs.
10. Hauling and storing of corn after husking ..... 10 hrs.

Total ..... 100½ hrs.  
No fertilizer was used.

## IRRIGATION

Adequate, available moisture during growing seasons.

### MOISTURE REQUIRED FOR CROPS.

According to experiments conducted by the State College, Pullman, Washington, and given in the station's 25th annual report, by Ira D. Cardiff, the moisture requirements for each of the following crops is as follows:

| Crop   | Yield Bushels | Tons Straw | Inches Water |
|--------|---------------|------------|--------------|
| Wheat  | 44.2          | 1.86       | 19.41        |
| Oats   | 85.0          | 1.72       | 15.72        |
| Barley | 48.4          | 1.64       | 14.10        |
| Corn   | 33.4          | 1.88       | 9.33         |
| Peas   | 31.5          | 1.27       | 12.45        |
| Beans  | 9.7           | .51        | 9.19         |

Millet ..... 2.75 10.91

The inches of water is figured on the acre basis and shows the comparative amount of moisture required for each of the above crops, whether by natural rainfall or if applied by irrigation, or partly by both methods. It is essential that the moisture should be present in the soil at the time of good growing temperature. Therefore if the rainfall is early steps should be taken to pulverize the soil to increase its moisture holding capacity, serving as a reservoir for the time water is most needed by the growing crops. The

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## Bumper Grain Crops

### Good Markets — High Prices

Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa.

No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer. In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. There is no war tax on land and no conscription.

Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

**J. N. GRIEVE**

Cor. 1st and Post Sts. Spokane, Wash.

Canadian Government Agent.

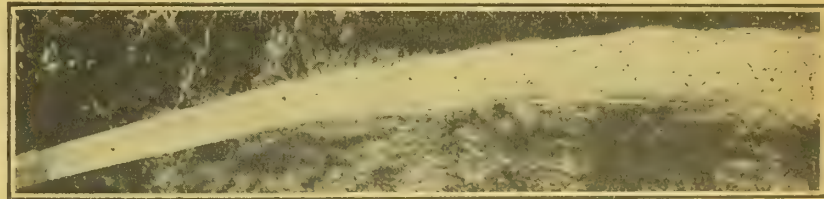


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Do you require a pump for any purpose on the farm, then we will be pleased to have you send for Bulletin No. 12, which explains working details and gives valuable information on pumping and irrigation.

**National Pump Co.**

542 First Ave. South, SEATTLE, WASH.





same principle applies to irrigation. The water may be applied some time in advance of its use by the crops, but should be thoroughly incorporated in the soil by disking and harrowing to produce the best results. Good crops cannot be produced without moisture and to guide the water so it will best serve when plant nourishment is required is the art of irrigation, whether artificial or in natural showers.

The corn crop does not require much moisture until it tassels, then a copious watering is very essential.

#### DOINGS ON THE PROJECTS.

According to the Reclamation Record, the Great Falls Meat Co., a packing plant in Montana, handled 23664 hogs, paying to farmers and laborers about a quarter million dollars.

A carload of flax shipped by a farmer on the Sun River project, it is expected, will return him about \$2200. Why not grow more flax?

#### Washington, Yakima Project.

Notwithstanding the very large number of live stock fed in the valley this year, the annual clean-up on hay shows shipments aggregating more than 7,000 cars, as against 5,500 cars the year preceding. At last report the shipment of potatoes amounted to 1,500 cars, many carloads going as far east and south as Texas. Apples are moving at the rate of 20 to 50 cars a week.

The Yakima Commercial Club, one of the most progressive of its kind in the West, is including in its program this year the very important matter of establishing closer relationships with the towns of the valley, as well as endeavoring to get in closer touch with the farmer through its two farm bureaus.

#### Lands Under Minidoka Project.

The State land board at Boise, Idaho, announces a public sale of approximately 5,000 acres of State lands in the Minidoka project about May 3. These lands include some of the choicest farm units. About two-thirds of them are under the gravity canals and the balance under the pumping system. For the former the water-right charge is \$42; for the latter the charge is \$47.50, payable in 20 years, without interest.

Following are the terms: Ten per cent of the purchase price on day of sale, balance in 40 annual installments, with interest at 6 per cent on deferred payments. Description of lands, location and requirements as to residence may be obtained by addressing Project Manager, United States Reclamation Service, Rupert, Idaho.

#### CO-OPERATING WITH LIVE STOCK.

##### Community Production and Breeding Standards.

I. D. O'Donnel, of the Reclamation Record, is urging the farmers on irrigated projects to co-operate in the raising of live stock as they do with the handling of the water.

Here are some of the advantages suggested for standardizing through co-operative breeding:

Improvements by additions of new blood may be made more quickly and with less expense to individuals.

Care and feeding of standard breeds may be standardized.

Cooperative breeding makes possible cooperative marketing.

Production of standard breeds brings the purchaser to the producer.

Standard breeds secure the maximum prices that any standard article earns.

By cooperative effort it is possible for a community to secure high-grade sires which would be too expensive for one or two or three individuals, and when a good sire is secured it could be utilized throughout its life of usefulness. On the other hand, if an undesirable sire is purchased, it may be eliminated without serious loss to any individual. If any individual brings an undesirable sire into a community he is often forced by financial considerations to continue the use of the undesirable sire in the community, to the unending detriment of live-stock interests in that community.

It is well known that different breeds of live stock require varying methods of care and feeding. Where the breeds for a community are standardized, the best methods of care and feeding may be determined for that locality and greater returns realized from feed and labor.

The advantages of cooperative breeding as an aid to cooperative marketing are obvious. Cooperative marketing will not make great headway until cooperative breeding makes it possible.

#### Standard Products at Maximum Prices.

Communities which have not established reputations for standard production are forced to market their surplus in hit-or-miss manner, carrying their live stock to the buying centers, where they are at the mercy of the buyers. When communities have established standards, buyers are glad to come to the producer, and the producer may reject unsatisfactory bids without fear of loss.

Go into any marketing center and inquire into the prices of anything on the market. You will find that the standard products carry the maximum prices. Standard products are the first to advance in price and the last to slump in price. It makes no difference whether the product be poultry, dairy product, beef, mutton, or pork, the producer of the standard product receives the reward to which he is entitled—maximum prices.

Consider the success attained by the community of Frenchmen who have made the Percheron horse favorably known throughout the world. The name Jersey is known where cows are milked and yet the name of that breed originated on a small island where people believed in standardization. Until Belgium got into the limelight through the misfortunes of war that country was most widely known as the home of a standard breed of draft horses. The Hereford, the Shorthorn, the Ayreshire, the Holstein, and other famous breeds of cattle were made possible through cooperation in communities bent on producing something worth while.

The settlers on each of our projects should get together and decide upon the production of certain types or breeds of farm animals. Individual likes and dislikes should be disregarded and all should work together to produce the best of the chosen breeds. This does not mean sacrifices by any individual; it means gain for every individual.

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APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

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Also Plum and Prune trees of the leading marketable varieties. English Hollies, berry bearing, in sizes from 18 inches to 6 feet. Prices reasonable.

Will entertain planting proposition from any who has a suitable location and soil in the Puget Sound district, to supply trees in exchange for land.

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## HOUSEHOLD DEPARTMENT

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### LEADER AND BUILDER.

I will start anew this morning with a higher, fairer creed,  
I will cease to stand complaining of my ruthless neighbor's greed;  
I will cease to sit repining while my duty's call is clear.  
I will waste no moment whining and my heart shall know no fear.  
I will look sometimes about me for the things that merit praise;  
I will search for hidden beauties that elude the grumbler's gaze;

I will try and find contentment in the paths that I must tread,  
I will cease to have resentment when another moves ahead.  
I will not be swayed by envy when my rival's strength is shown;  
I will not deny his merit, but I'll strive to prove my own;  
I will try to see the beauty spread before me, rain or shine—  
I will cease to preach your duty and be more concerned with mine.  
—S. E. Kiser.

## Genius of Mountains, Forests and Waters

By S. J. Harmeling, Before Western Washington Horticultural Assn.

Many of us, I believe, have seen the vast plains of the Mississippi and Missouri valleys. Some of us have lived there. We have seen the great level stretches of land melting into the distant horizon. We have seen the prairie openings and the parklike woodlands and have noticed how nature tries to harmonize the scenery. Instead of putting contrast into the landscape by spire-like trees she plants hawthornes, crab-apples, viburnums, elders and compass plants, all having marked horizontal lines, so as to repeat the lines of the horizon in limb of trees, shape of shrub and form of corolla of flower. We have seen, too, how men spoiled the landscape that God made beautiful, by planting rows of lombardy poplars and spirelike spruces and all sorts of houses entirely out of harmony with the spirit or genius of the prairies. If instead of these they had studied the genius of the plains and the wooded copses and had planted the beautiful crabapples, elms, elders, thorns, and roses and shrubs about their homes and farms, and had built their houses accordingly, thus preserving and repeating as often as possible the horizontal lines of the horizon, how much more beautiful would have been the prairie landscape of today.

In Illinois a few men have seen and felt that they must get back to the spirit of the plains, and they are doing a wonderful work. It started at Urbana with the university people. They are making Illinois beautiful where it had been spoiled. They are cutting the foreign trees and plants that are out of harmony with the general landscape and are planting in the things which intended should make the plains beautiful and distinct and give them an individuality all their own and not possessed by the mountainous or woodland country.

What should be our guide in this Puget Sound country? Where is the genius toward which we may turn for light on our style of landscape gardening and architecture?

Look at the towering Olympics, the Cascades, at Rainier [Tacoma], Baker, Adams, the gigantic conifers, spires and minnerets every where. Then look at the waters, the shore lines. The whole scene is different from any place on earth. The sublime in mountains, forests and waters is on a scale so vast that it puts all the dwellings of the gods and demigods of ancient mythology into insignificance.

Here, it seems, nature has combined the sublime and beautiful of every land into a harmonious whole.

On the plains and deserts of California we can see the appropriateness of the mission and bungalow style of architecture. The low appearance, broad overhanging eaves and wide porches are all in harmony with surrounding landscape and really minister to the comforts of the people. On the plains, too, this style may be appropriate. It may have the horizontal lines repeated often in roof and porch, and surrounded with horizontal branched trees and shrubs make a very pleasing picture and be comfortable during the long, hot summer days and not so liable to destruction by storms.

What must we think of a low broad bungalow set among a lot of abies grandis, thuya gigantea, hemlock, spruce and Engelman spruce, and flanked and bordered by our larger shrubs. To me it looks like "30 cents" or like a flathead siwash among a group of tall Scotchmen, or like Mutt and Jeff. On the shores of these wonderful waters it looks like a raft or a scow. There is no harmony in it with the sky lines of the trees and mountains. Besides this, we want all the light and sun we can get. Maybe the old Gothic style, the Swiss chalet or even the old Colonial style would be more appropriate. Maybe our architects will combine or evolve a style that fits in with our wonderful surroundings, some day.

I realize that I am treading on dangerous ground. The subject is a difficult and complex one. It is not like the woman's fashions, which may in one year change from one extreme to the other. It is one that grows by hard study and slow evolution. I would not be surprised if Prof. Gould will call me a rash amateur who dares to walk where angels fear to tread.

Whether your house be of the Gothic, the Swiss chalet or the Colonial, or whatever style, to look well and be homelike it must be set in some kind of a picturesque landscape.

Prof. Waugh says: "Place your house at least three times its height from the street or road. In the suburbs on the ordinary lot it will bring the house pretty well back and leave little room for garden,

## GARMENT PATTERNS

Order by number. See description below.



**1619-1625. Ladies' Costume.**  
Waist 1619 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 2 1/4 yards of 44-inch material, if made in plain outline. For pointed outline, 2 1/2 yards will be required for a 36-inch size. Skirt 1625 cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 4 1/4 yards of 44-inch material for a medium size, and measures 3 yards at the lower edge. This calls for TWO separate patterns, 10 cents FOR EACH pattern.

**1620. Costume for Misses and Small Women.**

Cut in 3 sizes: 16, 18 and 20 years. It requires 6 yards of 44-inch material for a 16-year size. The skirt measures 3 3/4 yards at the foot, with plaits drawn out. Price, 10 cents.

**1609. Girls' Dress, with or without Bolero.**

Cut in 4 sizes: 4, 6, 8 and 10 years. It requires 3 3/4 yards of 44-inch material for a 6-year size. Price, 10 cents.

**1615. Ladies' Camisole in Kimono Style.**

Cut in 3 sizes: Small, Medium and Large. It requires 1 1/4 yards of 36-inch material for a Medium size. Price, 10 cents.

**1623-1427. Ladies' Coat Suit.**

Coat 1623 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 1427 cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 6 1/4 yards of 44-inch material for a medium size, for the coat and skirt. The skirt measures about 3 yards at the foot. This calls for TWO separate patterns, 10 cents FOR EACH pattern.

**1596—Ladies' House or Morning Dress**  
Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6 3/4 yards of 36-inch material for a 36-inch size. The skirt measures about 3 yards at the lower edge. Price, 10 cents.

**1470. Girls' Dress.**  
Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 3 3/4 yards of 36-inch material for an 8-year size. Price, 10 cents.

**1617. Junior Dress, with or without Bolero.**

Cut in 3 sizes: 12, 14 and 16 years. It requires 5 1/2 yards of 36-inch material for the dress, and 2 yards for the bolero, for a 14-year size. Price, 10 cents.

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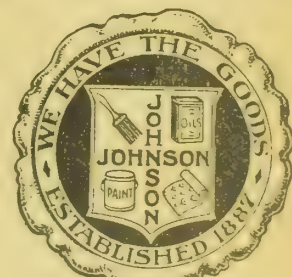
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chicken runs and barn, but it is impossible to get a good perspective unless the house is a reasonable distance from the street. If it must be so near that only a few square rods are in front, not much planting can be done.

In the country, where there is room, it is different. We ought to build 150 to 200 feet from the road and have room for a good sized open grassy lawn and plant our shrubs and trees in the border. We have a wonderful climate for this work. We may have plants from all quarters of the globe. Nearly every plant which is hardy in the Kew Gardens of London is hardy with us. We may have all sorts of freak plants, and that is just what Americans have planted. We have imported annually millions of dollars worth of Dutch bulbs, Japanese stuff absolutely without merit and remarkable only for freaks contrary to nature. People usually plant such stuff where grass ought to grow. If you will look from your car window when going along the streets of Seattle you will find hundreds of places, public buildings and residences where beautiful grass plot has been stuck full of Japanese retiosporas, junipers, arborvitae and other stuff, spoiling the beauty altogether.

What shall we plant? Shall we plant anything and everything that grows anywhere in the world and make our landscape look like the bunch of humanity that comes into Castle Garden, a kind of cosmopolitan affair or shall we localize it and give a strong individuality and mix with a little sentiment and emotion?

I believe we have been planting too much foreign stuff and the time has come to teach our children that they may learn to know and love our own native trees and plants and how to arrange and group them for beautiful effects.

On our grounds we have a group or little jungle composed of vaccinium ovatum and v. parvifolium, the redwood or gymnocarpa rose, some ferns and fringe cups, tellimas, all in the shade of some large mountain ash. Near by is a bunch of camillia japonicas of many colors. There is also a large group of foreign evergreen shrubs, aucubas, laurels, rhododendrons, from different parts of the world, darwin barberry and among them lilies and penstemons. Nearly all who see these groups last turn back to the natives and say: "I never before knew that these things are so beautiful."

We will surely learn to love our native trees and shrubs as we get better acquainted with them.

Did you ever hear a Scotchman sing of Dutch tulips and hyacinths or of Japanese chrysanthemums and dwarf flowering cherries? No. He has too much sense, too much feeling. He loves his own banks and braes and flowers most.

"Let the proud Indian boast of his jasmine bowers,

His pastures of perfume and rose covered dells,

While humbly I sing of those wild little flowers,

The bluebells of Scotland, the Scottish bluebells."

If you want to see a sight you will never forget, go up Hoods Canal and see the mountain slopes ablaze with Rhododendrons Washingtonium. The flowers are rose colored, running into blush and almost white in some plants. If they were scarlet you would think the mountain side on fire like the burning bush of Moses. Bring these to your home grounds and plant large groups of them if you have the space. There is not a more beautiful species in the catalog, and it is the child of our own hills and shores. Up in the mountain at 6000 to 7000 feet altitude is another of smaller growth, R. album. Bring it down, too, and make it feel at home in your border.

We are quite rich in ornamental species of the ericaceae or heather family. Most of us like to see good hedges in the proper place. A hedge along the front yard sets off the lawn and shrubs and borders to good advantage. We have been planting all sorts of hedges, arborvitae hedges, privet hedges, thorn

hedges, cyprus hedges, laurels, and have neglected several of our own plants for this purpose. If you have never seen a hedge of vaccinium ovatum, high bush huckle berry, you cannot realize how beautifully ornamental such a hedge is. It is as fresh and green in winter as in summer. Very early in the spring it has beautiful blush urnshaped flowers followed in the fall with enormous quantities of shiny black or in some varieties with deep blue berries that persist till Christmas, and are better for pies and sauces than currents. It stands the shears well, with a little judgment and care can be easily transplanted, is of slow growth and will last several generations. Could you imagine a hedge more beautiful for the front yard?

A dear old lady who had never studied the botany asked me a short time ago to settle a dispute she had with a neighbor. She insisted upon it that she had found two varieties of Oregon grapes. I was glad that I could assure her that I could find four varieties on Vashon. If you have not seen a group of these different Oregon grapes make one and I assure you the beauty of it will surprise you. Plant in the centre barberis aquifolium. It has 7 to 9 leaflets and grows about six feet tall. Next to it plant b. pinnata with 15 to 17 leaflets and two to three feet tall. Then B. nervosa with tufts of leaves two feet long and border this with B. repens with 3 to 7 leaflets. Such a group will arrest attention of the passerby. It will have an individuality all its own and will awaken more emotion in all lovers of nature than a whole field of cannas or dahlias, because these barberries are the children of our own land. They meet you way up on the mountain side and smile upon you and whisper something when all is still as death. When you walk upon the waybeaten shores of these inland waters there again it meets you everywhere and smiles. In the deep, dark shades of the giants of the forests you meet it again. Is the voice of the spirit of this land of the mountains and woods and waters. These Oregon grapes would make beautiful ornamental hedges.

[To be continued.]

#### ANNUAL FLOWERING PLANTS.

##### Starting in the Hot Beds.

For those who own hotbeds or cold frames, the specialists of the U. S. Department of Agriculture suggest that their annual flowering plants are started at once.

Some of the flowers which give particularly good results if started in hotbeds or cold frames are:

Agertum, Allysum, Aster, Calendula or Pot Marigold, Calliopsis, Campanula, Castor Bean, Chysanthemum, Cockscomb, Cosmos, Four-O'Clock, Godetia, Marigold, Petunia, Sweet William, Scotch Pink, Scarlet Sage and Verbena.

##### Sown Later in the Open.

Some of these are:

Ageratum, Allysum, Aster, Pot Marigold, Calliopsis, Campanula, Clarkia (shade), Cockscomb, Dahlias (single), Godetia, Gaillardia, Mignonette, Pansy, Pinks, Rudbeckia, Snapdragon, Stocks, Zinnias.

Certain other flowers die or do not do well if they are transplanted. These therefore should be sown only in the open ground or beds where the plants are to grow. The varieties which it is best to sow in a permanent location are:

California Poppy, Candytuft, Corn Flower, Forget-Me-Not, Lobelia, Nemophila (shade), Phlox Drummondii, Sunflower, Sweet Peas.

Sweet peas should be in the ground as soon as it is dry enough to work. The soil should be spaded up and



## Choice Rose Bushes

In order to reduce our surplus stocks of choice two-year Rose Bushes, we will put them up in collections of 6 and 12 at very low prices.

Special—Your selection of colors but our selection by name, all correctly labeled (regular value 35c to 50c) at 6 for \$1.35, 12 for \$2.25 postpaid.

Remember—This price is for our regular 2-year-old bushes that will bloom nicely this season. Our Complete Catalog No. 44 on request.

**ROUTLEDGE SEED & FLORAL CO.**

169 2nd St.,

Portland, Oregon.

## TREES THOUSANDS

Prunes—Grafted Franquette, pure Vrooman Strain. Everything in the Nursery line at low price. Buy direct from the man who grows, save 50 per cent. (No Agents.) Send for Planter's Catalogue and Price List. We sell right. 25 years in business.

**CARLTON NURSERY CO.,**

Carlton, Ore.

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

## OREGON NURSERY CO.

ORENCO, OREGON

## Milton Nursery Co.

### WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

## Milton Nursery Company, Inc.

Milton, Oregon

## Christopher Nurseries

Wholesale and Retail

### Nurserymen for Four Generations; 25 Years in Present Location

From this experience we are producing stock which afford planters the very highest measure of satisfaction; carefully grown, free from disease.

Varieties complete of **APPLES, PEARS, CHERRIES, PLUMS, PRUNES**, adapted to the Pacific Northwest, in one and two-year-old trees; also fine three-year-old Lamberts, 6-8 feet.

Bush Fruit plants of all kinds. Write for catalog and price list.

**ORNAMENTALS**—Roses, Azalias, Hollies, berry-bearing; Rhododendrons, English Laurels, Blue Spruce, Retinosporas, Cypress.

**JOHN A. STEWART & SON, Props.,**

Christopher, King Co., Wash.

## HOPE FARM SEEDS

**WHITE SPRING VETCH**—Pure creamy white (new), good as split peas for the table; 100 per cent better than common vetch for stock. Try it and get a start. 10c per package, 6 packages for 50c.

**HILL SELECTED POTATOES**—Varieties, Factor, Up-to-date, smooth high quality, heavy yielders, very best two. State quantity wanted and write for prices.

**FIELD CORN**—Acclimated to the Coast section. Strong vitality, kept dry sure to grow. Varieties, Yellow Dent and Rutherford, both good. State quantity wanted when writing for prices.

As the demand is likely to be stronger later in the season, to insure your order being filled, please make reservation as early as possible.

Kindly mention this paper when writing.

## C. E. FLINT & SONS

BLAINE, WASH.



well prepared and then a trench should be dug 4 inches deep; in the bottom of this the peas should be planted about 2 inches apart. When the peas are to be grown over chicken wire or brush stuck in the

ground it is customary to sow them in two parallel rows, 6 to 8 inches apart. In this way on the same amount of trellis double the number of plants can be grown with satisfactory results.

## DAIRY DEPARTMENT

**Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.**

### WALLA WALLA VALLEY COW TESTING ASSOCIATION. JANUARY TEST.

O. V. Patton, County Agriculturist.

The Walla Walla Valley Cow Testing Association has been in operation now for three months and each month is bringing a greater number of cows into the list producing better than 40 pounds of butterfat during the month. There are 39 cows on the list this month, ten of them having been on the list all three months and eleven of them for two months. Of the 39 cows there are 29 of them which are known to have been sired by a purebred, further demonstrating the value of good breeding.

Before the testing began a number of the members were asked to name their five best cows in their relative order, and the indications so far are that none will have been named correctly and in only one or two instances will the best cow have been placed first. The cow testing association shows the owners the true standing and worth of each cow.

Below is the January list of the cows producing better than 40 pounds of butter fat during the month:

| Owner—                    | Breed<br>of cow | Pounds<br>of milk | Pounds<br>of B. F. |
|---------------------------|-----------------|-------------------|--------------------|
| Walla Walla College ..... | Holstein        | 2393              | 74.2               |
| Walla Walla College ..... | Holstein        | 1767              | 70.7               |
| Walla Walla College ..... | Holstein        | 2533              | 65.8               |
| State Penitentiary .....  | Holstein        | 1395              | 61.3               |
| State Penitentiary .....  | Holstein        | 1407              | 57.6               |
| E. C. Burlingame .....    | Jersey          | 818               | 56.4               |
| Homer Brown .....         | Holstein        | 1085              | 56.4               |
| Mrs. M. E. Lowden .....   | Durham          | 846               | 54.9               |
| State Penitentiary .....  | Holstein        | 1550              | 54.2               |
| State Penitentiary .....  | Holstein        | 1196              | 53.8               |
| Hodgen Brothers .....     | Durham          | 989               | 53.4               |
| Hodgen Brothers .....     | Jersey          | 911               | 52.8               |
| State Penitentiary .....  | Durham          | 911               | 51.9               |
| Homer Brown .....         | Durham          | 799               | 51.1               |
| State Penitentiary .....  | Holstein        | 1246              | 51.0               |
| State Penitentiary .....  | Holstein        | 868               | 49.4               |
| Coyle Brothers .....      | Jersey          | 821               | 49.2               |
| Verna Brown .....         | Guernsey        | 1116              | 49.1               |
| State Penitentiary .....  | Durham          | 1066              | 49.0               |
| R. E. Bean .....          | Jersey          | 1068              | 47.0               |
| State Penitentiary .....  | Holstein        | 1252              | 46.3               |
| State Penitentiary .....  | Durham          | 843               | 46.3               |
| State Penitentiary .....  | Holstein        | 880               | 45.7               |
| R. H. Wellman .....       | Jersey          | 732               | 45.4               |
| J. E. Jones .....         | Jersey          | 850               | 45.0               |
| J. M. Blue .....          | Jersey          | 704               | 45.0               |
| State Penitentiary .....  | Holstein        | 1010              | 44.4               |
| Homer Brown .....         | Mixed           | 1057              | 44.3               |
| E. C. Burlingame .....    | Jersey          | 936               | 44.0               |
| State Penitentiary .....  | Holstein        | 1128              | 43.9               |
| Hodgen Brothers .....     | Jersey          | 967               | 43.5               |
| Walla Walla College ..... | Holstein        | 1597              | 43.1               |
| State Penitentiary .....  | Holstein        | 859               | 42.4               |
| Charles Coffin .....      | Guernsey        | 768               | 42.2               |
| William Reser .....       | Jersey          | 654               | 41.8               |
| State Penitentiary .....  | Holstein        | 923               | 40.6               |
| Charles Coffin .....      | Durham          | 672               | 40.3               |
| Russel Brothers .....     | Jersey          | 889               | 40.0               |
| R. H. Wellman .....       | Jersey          | 852               | 40.0               |

### DAIRY HERD RECORDS THEIR VALUE, AND HOW TO KEEP THEM.

By A. B. Nystrom, Dairy Husbandman, State College, Pullman, Wash.

In every herd there are cows that vary considerably in the amount of milk and butter-fat produced. A low production of milk may be associated with a high test, or a large production of milk may be accompanied with a low test. In either case the cow may bring in a good profit to the owner, showing that the amount of milk as well as the per cent of fat must be taken into consideration in determining the value of a cow. In view of this fact, every dairyman should endeavor to discover and remove from the herd those cows that produce small amounts of milk and at the same time give milk of a low percentage of butter-fat.

#### Kind of Cows Profitable.

The cost of feed and care, also the expense of housing stock is practically the same, no matter whether the cows are heavy or light producers of butter fat. Since the feed, over and above that used for maintenance, should be used to furnish energy for the production of milk and butter fat, it is desirable to keep only those cows that are high producers. By means of records of production, it is possible to select those cows that turn the surplus feed into milk and butter fat, rather than body fat.

#### Records a Business Necessity.

It is seldom that there is such a variation in the profits accruing from other lines of work as we find in the dairy business. In one investigation conducted by Hoard's Dairyman, it was found that out of 100 creamery patrons, 38 kept cows at an actual

## Pure Bred Holstein Records

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.



Sen 2-year-old cow Korndyke Best's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

#### SKYKOMISH VALLEY HERD

#### HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312, and several world record 2 year old cows. We offer for sale valuable youngsters.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

**C. E. ELDRIDGE,**  
CHIMACUM,  
WASH.

Kindly mention this paper

## JERSEY HEIFERS FOR SALE

Have a few registered Jersey heifers and heifer calves as well as young Register of Merit cows to offer at prices far below their value. All high class, prize winning, producing stock.

SILVER BIRCH FARM

Route 1, Box 3

NEWPORT, WASH.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

## PUGET SOUND HERD HOLSTEINS

Our consignment to the sale to be held in Snohomish May 3rd and 4th consists of 17 head of which a number of the females are heifers and cows with good records; also a few of them are safe in calf to the great bull "Sir Chimacum Wayne." One of the bulls is a son of this great bull. The records of his dam, sire's dam and sire's granddam average higher than any bull in the world for milk. The dam of this young bull has to her credit for 10 months 26,726.9 lbs. milk and 826 lbs. butter.

Wm. Bishop, Prop.,

Chimacum, Wash.

## Waikiki Farm

Breeders of  
JERSEY and Ayrshire Cattle  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



loss, one of them made \$2.30, and one lost 50 cents for every dollar invested in feed. In another investigation to determine the advisability of supplementing home grown with mill feeds, it was found that when records were kept, the balance was in favor of those buying mill feeds. Those that bought mill feeds received \$1.57 for butter fat from the creamery for each dollars worth of feed the cows consumed. Those that fed only home grown feeds, without any supplement, received \$1.45 for each dollar's worth of feed the cows consumed.

#### Necessity of Systematizing Dairy Work.

Although dairymen know in a general way the amount of feed eaten and the production of the various cows in the herd, few have definite knowledge as to the exact production, or the cost of the feed consumed. When once a system of records of production has been begun so that the dairyman will know accurately the cost of producing milk, it will be found that many cows that were considered profitable will prove to be unprofitable, and possibly cows that were considered unprofitable will be found to be profitable.

#### Cows Judged by Their Production.

Cows should be valued by the amount of milk and butter fat that they produce. Other factors, such as regularity in breeding, ability to produce strong, healthy calves, and also the ability to produce offspring of equal or greater producing power than the dams, are factors that make for value in our dairy cows. Without an accurate record of all these points, the best cow in the herd is likely to have equal rank with the poorest one in the mind of the owner.

#### Value of Records in Herd Improvement.

The matter of herd improvement, or the increasing of the productive capacity of the individual cows, should be a matter of considerable importance to the dairyman. Profits in the dairy depend chiefly on the ability of the cows to change the cheaper roughage and grain into the more expensive milk and butter-fat. High individual production is desirable at the present time, but it will be more necessary in the future than it has in the past if dairying is to continue to be a profitable business.

Records are of value in enabling the dairyman to select the best cows. For this purpose, breeding records as well as those of milk and fat production are kept. The poorer cows, namely those that are shy breeders, or those that do not return sufficient milk and butter-fat to pay for the cost of feed and care, should be dropped from the herd. The exact point at which a cow becomes unprofitable varies in different communities; the cost of labor, feed, and the price received for the milk determine this. In general, unless the production reaches 10,000 pounds of milk or 300 pounds of butter-fat, yearly, the cow is not returning a profit over cost of feed and care. The average of production can be raised by means of grading. Raising the average production by means of grading is a matter of better breeding and in this case the cows are bred to a sire of good dairy breeding. Only the calves from the better cows are selected, and are added to the herd at maturity. Records of production are

necessary in this case, first to determine which calves to keep, second to determine whether the average of production is increasing or decreasing.

#### Value of Records to the Feeder.

By knowing exactly from day to day what a cow is producing, the feeder can prepare a ration accordingly. Cows should be fed according to the amount of milk and butter-fat produced. All cows should not be fed alike, and without a record of production it is impossible to estimate the amount of feed that should be fed.

One pound of grain to every 3 to 3½ pounds of milk is the ration fed by many dairymen that weigh their milk. Others who test the milk for butter-fat, find that it is desirable to feed as many pounds of grain daily as the cow gives butter-fat in a week.

#### Value of Records in Selling Stock.

From the breeder's standpoint, records of production are valuable when selling stock. Private records not only are valuable to the owner in the ways that have been enumerated, but they aid him materially in selling his stock. An animal that is tested is worth considerably more than an untested animal, and if the figures are there in black and white, they have a good deal of weight, even if they are private records.

In some herds the milk is weighed daily by the owner and then weighed and tested for one or two days every month by the agent of a testing association. In such cases the record is more authentic than the private herd record, and can be relied upon as giving an estimate of the value of the cow for milk production.

Records of production that are authenticated by the different breed associations, under the supervision of the State Experiment Station, are reliable and serve to add inestimable value to the animal and her progeny. Buyers of pure bred stock place considerable emphasis on such records when buying animals.

#### BLUE RIBBON WINNER'S RECORD.

St. Mawes Beauty 195047, the Jersey heifer which was awarded first place in the two-year-old heifer class at the Panama-Pacific International Exposition, has completed a year's authenticated record of 10,239 lbs. of milk, 586.8 lbs. of fat.

This record was started at one year and eleven months of age, and during the tenth month of test she was shipped from Oregon to San Francisco to the livestock show at the exposition.

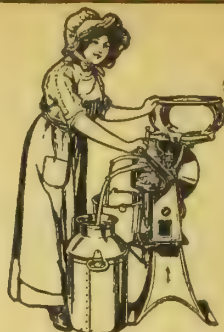
Her record of 690.4 lbs. of 85 per cent butter places her third in class 1 (cows under two years), and gives her the distinction of being the highest yearling producer of fat in the State of Oregon.

St. Mawes Beauty was bred and is owned by Mr. Ed. Cary, of Carlton, Oregon.—THE AMERICAN JERSEY CATTLE CLUB.

324 West 23d St., New York.

#### LYNDEN CREAMERY COMPANY OPENS WHOLESALE STORE AT SEATTLE.

According to the Tribune, the Lynden Creamery Company will open a wholesale butter, egg and cheese business at Seattle, seeking thereby to reduce the expense between the producer and consumer. With the



## It costs less to buy a DE LAVAL than to buy experience

Each year some 40,000 farmers, who have bought at one time or another, "cheap" cream separators, discard the inferior, cream wasting machines and replace them with clean skimming De Laval.

These men bought the "cheap" machines because they thought they were "good enough" or "just as good" and that by purchasing such machines they could save a little money. They actually would have been better off in most cases had they bought no separators, for they lost most of the money they spent for the "cheap" machines, besides all the cream these machines have failed to get out of the milk.

No one ever saved money using a "cheap" cream wasting separator or an old or half worn-out machine. No one ever got back the money spent for such a machine by continuing to use it. Those who bought "cheap" machines and got out of the difficulty best are the ones who quickly discovered their mistake, discarded the inferior machines and put in real cream separators—De Laval.

There are nearly 2,000,000 farmers who have bought De Laval, and every one of these had just as many opportunities to buy "cheap" separators as any one else. They did not do it and are now money ahead. They have avoided paying the high cost of experience, and their De Laval have paid for themselves many times over. It always pays to buy a separator of proved, known superiority.

The nearest De Laval agent will be glad to let you see and try a De Laval on your own farm, without obligating you in any way. It is better to take advantage of this opportunity than to pay dearly for your cream separator experience. If you don't know the local De Laval agent, simply address the nearest main office as below.

### DE LAVAL DAIRY SUPPLY COMPANY

165 BROADWAY  
NEW YORK

101 DRUMM STREET  
SAN FRANCISCO

1016 WESTERN AVENUE  
SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## ALBERS CALF MEAL

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"Raised on Albers Calf Meal"

Do You Want Good, Strong, Healthy Calves?

Then feed the most satisfactory calf meal on the market.

### Albers Bros. Milling Co.

SEATTLE

TACOMA

PORTLAND

SAN FRANCISCO

LOS ANGELES

OAKLAND

## CASH FOR CREAM

Write us for suggestions to make highest profit margin on butter fat based on market when shipping.

### Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman



many wholesale houses in Seattle, this step seems like carrying coals to New Castle, but it is an experience many producing organizations seem bound to go through. Several of those which have tried it find the expense of operation greater than the supposed margin of profit to be derived. If six or more of the leading creameries of the Pacific Northwest would get together and unite on a representative who should have power, or at least a voice, in fixing the wholesale price of their standard products, at Seattle, it is likely the results would be more satisfactory, but in this case as with others, experience seems to be the only real teacher.

### BEST YOUNG GUERNSEY RECORD.

Nugget Primrose 48835, the 2-year-old Guernsey owned by C. W. Barron, of Cohasset, Mass., completed a year's record on January 31, with 15436.10 pounds milk and 705.56 pounds butter fat.

She was started for her record on February first and her average daily milk production was 42.29 pounds of milk. One day during the last month of the her test she produced 40.5 pounds of milk and on her best day gave only 49.4, thus showing the evenness with which her record was made.

Nugget's Primrose is not a large cow, weighing but 710 pounds when she started her record. Though small she has a wonderfully loose and mel-low hide, a very large udder of exceptionally fine quality and a prominent milk vein. It was for only a few days at the beginning of her record that she enjoyed the freedom of a box stall. She was then placed in her stall in the milking string and has there made her remarkable production.

As to breeding while she traces to good stock and well known animals she descends from them through lines which have not been heard as much of as have some others.

Her sire is Red Nugget 19393, a son of Primrose King of Cedarbrook 14221 and Judith K. 2d 24426, the latter animal being on Mr. Barron's farm, and producing well on official test at eleven years of age.

The dam of Nugget's Primrose 48835 is Silene's Primrose 34764, who was also by Primrose King of Cedarbrook 14221, who traces back to Sheet Anchor 2934 A. R. Silene's Primrose 34764 has just completed a record for A. L. Lincoln of Norwell, Massachusetts, of 19853.32 lbs. of milk and 547.53 lbs. of butter fat. Her dam was Imp. Silene of Les Prevosts 19696, one of Mr. Barron's foundation cows.

### RAISE THE CALVES.

Dairymen in the Pacific Northwest are figuring on raising a larger proportion of the calves necessary for the development of future dairy herds. It costs at least \$60 to raise a two-year-old heifer, so of course only sires out of productive ancestry will be used by those seriously considering the raising of cows which are to produce at least 40 pounds milk per day, well up to 4 per cent fat capacity.

Cows of this class coming fresh at about 26 months of age are selling at good prices and indications are they will continue to do so for some time to come. Those who can start

with a few pure bred cows will still do better, for cows with great producing capacity, with fixed records back on both sides, frequently go into the \$150 to \$300 price, and the actual cost of raising this class of cows is not much greater than that of ordinary grade or scrub. Of course, the care is more exacting. Those who raise the better class of cows are constantly planning ahead to produce the necessary amount of feed as cheaply as possible, to provide ample shelter and are careful to see that the growing youngsters are neither stunted nor overfed, for the best development of the purpose intended.

To produce a standard cow which has a fixed value requires standard ideals of the progressive farmer, who undertakes the work. The opportunity for being well rewarded for this kind of skill was never better than in the Pacific Northwest at the present time.

Make the plans right for the raising of young cows and the matter of financing the project should not be a difficult matter, for as a standard product or article is produced there is usually a corresponding maximum market price for those who can fill orders promptly and satisfactorily.

### RICHEST COW IN FAT PERCENT.

A majority of the milk markets are now buying their supply on the butter fat basis. It is with more than a passing interest, therefore, to note the Register of Merit record of the Jersey cow Merry Maiden of Innesfells 307454, owned by Dr. J. F. Thompson, of Portland, Maine.

The milk of Merry Maiden averaged 8.13 per cent fat for 365 days. This is the world's highest butter-fat average for a year record. Her lowest monthly test was 7.13 per cent, made in the sixth month of her test, and the highest was 10.05 per cent, made in the twelfth month. The highest percentage of fat for a single milking was 11.00 per cent.

Merry Maiden started test at four years four months of age, under the supervision of the Maine Agricultural College.

The final results show that she produced 560.4 lbs. fat, or 659 lbs. 85 per cent butter from 6,896.5 lbs. of milk.

THE AMERICAN JERSEY CATTLE CLUB.

324 West 23d St., New York, N. Y.

### GARGET REMEDY.

A subscriber desires a remedy for Garget or a condition where bloody milk is produced by the cow.

Reply by Dr. S. B. Nelson.

Give your cow a teaspoonful of sodium hyposulphite in a quart of water morning and evening for several days. That has given very good results in many instances and may be of value to you.

### WESTERN WASHINGTON HOLSTEIN BREEDER'S SALE.

The sale of the Western Washington Holstein Breeders' Association, which was postponed until May 3rd, at Snohomish, will be larger than any previously held and high class stock will be offered by the members as indicated in the catalog.

William Bishop, the well-known Holstein breeder, Chimacum, Wash., will consign sixteen females and three

# Jerseys at Public Sale

APRIL 3rd, ELECTRIC LIGHT FARM, ELLENSBURG, WASH.

## 51 HEAD ALL REGISTERED

More and larger average records of production official for the number of cattle in this sale than has ever been offered of Jerseys in America at any time or place.

Here are some of the Register of Merit Records:

| Name of Cow—                | Days of Test | Yrs. Old | Lbs. Butter Produced | Lbs. Milk Produced |
|-----------------------------|--------------|----------|----------------------|--------------------|
| Queen's B. Electra .....    | 365          | 4        | 604.9                | 10135.             |
| Loretta D's Queen .....     | 365          | 4        | 602.5                | 9752.4             |
| Waltz Countess .....        | 365          | 4        | 582.                 | 8947.5             |
| Baby Buff .....             | 365          | 3½       | 577.3                | 9413.3             |
| Muriel Olga .....           | 281          | 3        | 536.67               | 7870.9             |
| Rosaire's Olga Maiden ..... | 365          | 2        | 529.6                | 7932.8             |
| Poppy's Maiden .....        | 365          | 4        | 511.6                | 6592.1             |
| Rosaire's Princess .....    | 365          | 2        | 493.9                | 7025.8             |
| Rosaire's Gelatine .....    | 365          | 2        | 484.3                | 8640.6             |
| Dona Beauty .....           | 365          | 9        | 480.9                | 9015.8             |
| Belle's Comelia .....       | 365          | 4        | 467.93               | 7329.3             |
| Gov. Mar. Mella .....       | 365          | 2        | 464.5                | 6516.5             |
| Wild Rose of Linn .....     | 365          | 8        | 441.5                | 8575.2             |
| Gertie's L. Melinda .....   | 365          | 3        | 432.9                | 7622.9             |

This herd is in A-1 condition, the best American and Island breeding. Among the cows are 12 daughters sired by the Grand Champion bull Gertie's Brown Lad, of the Adam Stevens herd; also 16 daughters of Cowslip's Oxford of imported breeding.

They are good for from 600 to 800 pounds at mature age.

This is one of the greatest opportunities to obtain foundation stock of high records and breeding ever offered buyers of Jerseys in the Pacific Northwest.

Write for catalog which describes further Register of Merit and breeding records.

**Burt Pease, Ellensburg, Wash.**

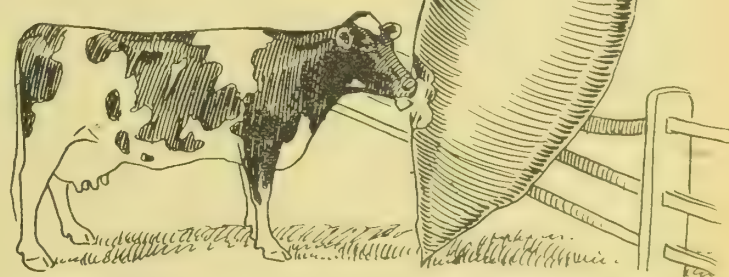
Col. J. W. Hughes, Auctioneer, Forest Grove, Oregon

## The Sludstrup Beet for Feed

The past winter season was very trying for dairymen who were not provided with ample feed. Those who had plenty of roots to complete their dairy ration did not worry. The planting will be increased very greatly this year.

When it comes to the raising of beets the farmers call for **Sludstrup**, for this variety is so far ahead of others there is no comparison. Since our introduction of it, a few years ago it has become very popular. We are prepared to offer a high quality of seed as follows, with the postage or express paid by us:

|                      |        |
|----------------------|--------|
| 1 pound for .....    | \$0.45 |
| 5 pounds for .....   | 2.25   |
| 10 pounds for .....  | 4.00   |
| 25 pounds for .....  | 8.75   |
| 100 pounds for ..... | \$2.00 |



Ask for samples and send for copy of our new catalog.

**Aabling-Boyce Seed Co.**

89 Pike St., SEATTLE, WASH.

### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

MOUNTAIN VIEW FARM

Mt. Vernon, Wash.

Otto Rundgren, Prop.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.



bulls. The Greenbank Co. are consigning 50 head.

Other members of the association are also contributing from their best according to production records.

Those who have expressed an opinion of the individuals to be consigned say the offerings are of a choice class and such as cannot fail to

afford a high measure of satisfaction to buyers. The association expects to continue these sales and realize that the buyer must see and feel that he has obtained full value for the purchase price.

About 200 head will be offered in this sale to be held May 3rd and 4th.

### COW TESTING AT MONTESANO

The following is the report of R. W. McKenna, official tester for the Montesano Cow Testing Association for the month ending Feb. 16, 1916.

| Owner, Name and Breed—                      | Age<br>Yrs | When<br>Fresh | Lbs.<br>Milk | %<br>Fat | Lbs. But-<br>terfat |
|---------------------------------------------|------------|---------------|--------------|----------|---------------------|
| E. L. Brewer, Emanon's Anne West, Jer. 4    | Dec. 27    | 1409.2        | 6.154        | 86.72    |                     |
| Murphy Bros., No. 12, Grade Jersey .... 8   | Nov. 1     | 1050.         | 5.6          | 58.8     |                     |
| Murphy Bros., No. 28, Grade Jersey .... 4   | Jan. 8     | 924.          | 6.           | 55.4     |                     |
| Oscar Smith, No. 35, Grade Jersey .... 7    | Dec. 15    | 984.          | 5.6          | 55.1     |                     |
| J. H. Taylor, Gertie's Lily, Jersey .....12 | Jan. 29    | 1035.         | 5.2          | 53.8     |                     |
| E. L. Brewer, Owl's Golden Queen, Jer. 4    | Apr. 16    | 820.6         | 6.531        | 53.59    |                     |
| Oscar Smith, No. 24, Grade Holstein ... 8   | Jan. 20    | 1326.         | 3.9          | 51.7     |                     |
| Murphy Smith, No. 6, Grade Jersey ..... 5   | Nov. 15    | 812.          | 6.2          | 50.3     |                     |
| Oscar Smith, No. 97, Grade Jersey ..... 5   | Oct. 8     | 1041.         | 4.8          | 50.      |                     |
| Murphy Bros., No. 4, Grade Jersey ..... 8   | Nov. 10    | 1080.         | 4.6          | 49.7     |                     |
| Murphy Bros., No. 20, Grade Jersey ..... 5  | Sep. 15    | 831.          | 5.8          | 48.2     |                     |
| A. P. Stockwell, White Beauty, Ayre.... 5   | Jan. 4     | 1128.         | 4.2          | 47.4     |                     |
| Murphy Bros., No. 9, Grade Jersey ..... 7   | Nov. 1     | 1032.         | 4.5          | 46.4     |                     |
| Albert Arland, Jersey, Grade Jersey .... 7  | Nov. 19    | 1038.         | 4.4          | 45.7     |                     |
| J. H. Taylor, Massy Polo's Baby, Jersey. 3  | Jan. 26    | 1044.         | 4.3          | 44.9     |                     |
| G. C. Collett, Lucky, Grade Holstein ... 5  | Nov. 22    | 909.          | 4.9          | 44.5     |                     |
| Murphy Bros., No. 21, Grade Jersey .... 5   | Nov. 15    | 816.          | 5.4          | 44.1     |                     |
| Parker Askew, Pogos Lady Alpha, Jersey 7    | Nov. 1     | 897.          | 4.9          | 44.      |                     |
| Murphy Bros., No. 2, Grade Jersey ..... 7   | Oct. 15    | 786.          | 5.6          | 44.      |                     |
| J. B. Gochmour, Chub, Grade Jersey .... 4   | Jan. 23    | 813.          | 5.2          | 42.3     |                     |
| A. P. Stockwell, Rabena, Ayreshire .... 4   | Jan. 12    | 1173.         | 3.6          | 42.2     |                     |
| G. C. Collett, Chub, Grade Jersey ..... 3   | Oct. 1     | 848.          | 4.8          | 40.7     |                     |

In looking over these records it must be borne in mind that many of them were made under the most severe weather conditions that have been known in these parts for perhaps twenty years. Cows in this county were very likely working under a greater handicap than were those of the eastern part of the state where a severe winter in not an uncommon occurrence. There has doubtless been a greater shortage of succulent feed in this district than in other sections. It was impossible to get roots out of the ground. The only succulent feed available was silage or wet beet pulp.

It might be of interest to note that the majority of the owners of cows, in the list for the past month, have one or more silos. Conditions existing the past winter should impress on the dairymen more than a thousand articles or speeches, the desirability and I might say the necessity of a silo for economical milk production.

The feed cost for the cows in this list ranged from \$8.36 to \$11.38, using the prices that were set for the first quarter. Prices the past month have doubtless been higher than the prices that are used in the calculations, hence the actual feed cost would be somewhat higher than the figures quoted.

C. F. MONROE,

County Agriculturist, Grays Harbor County, Montesano, Wash.

### HOLSTEIN REGISTRY.

The Pacific Northwest is gradually increasing its proportion of advanced Registry Holsteins from the list of cattle bred and raised in this section. This is only the natural course compelled by the climatic conditions and natural environments together with the good judgment and skilful work on the part of the breeders.

Among the list which appears in the Register for January are:

Nancy Posch 147,389, owned by William Todd & Sons, North Yakima, Wash., making a 7-day record of 20.499 pounds of butterfat from 3.62 per cent milk and a 30-day record of 83.412 pounds butterfat from 3.67 per cent milk at 7 years old.

In the same class, Lucy Segis 161,364, owned by J. P. Marks, North Yakima, making a record of 17,863 pounds of butterfat from 3.20 per cent milk at 5 years old.

In the senior 4-year-old class Hollywood Lucile Posch 171,730 owned by J. L. Smith, Spokane, Wash., made 19,632 pounds of butterfat in seven days from 3.73 per cent milk and 40,513 pounds in thirty days at 4 years and 8 months.

In the junior 3-year-old class, Reka Segis 214,429, owned by E. B. Marks, North Yakima, produced 13,559 pounds of butterfat in seven days from 3.32 per cent milk at 3 years 2 months.

These records confirm the opinion of leading breeders that the Pacific Northwest will in a short course of years, become a leader in the production of both registered stock and of dairy products.

The Cook Stock Farm, recently bought a young sire from John L. Smith, Spokane, paying close to \$1000 for the animal. They have 60 head of grade Holsteins and will raise a high grade dairy herd. They also have Herfords for beef and when these dams do not milk enough for the "fatted calf" the Holstein as a nurse will come to the rescue.

### JERSEY CATTLE SALE.

Exceptional Opportunity for High Quality.

The dispersion sale of the noted Jersey herd of Mr. Bert Pease, proprietor Electric Light Farm, Ellensburg, Wash., advertised in this paper affords an opportunity for the dairymen of the Pacific Northwest to get some high quality dairy stock at their own prices. The cows are nearly all young, with Register of Merit tests and records accurately ascertained and published. The cattle are in the best of health and are profit makers for their owner. The closing up of an estate makes this sale necessary. The work of building up this herd represents the painstaking efforts and skill successfully accomplished by Mr. Pease through several years, and others will benefit from his arduous labors. If the dairymen of Kittitas county are alive to their own best interests, they and their friendly bankers will see that this stock is kept in their district, even at long prices, for now on a rising market it would be very difficult to get stock

## Moxee Valley Holstein Farm

A NICE BUNCH OF YOUNG HOLSTEINS FOR SALE

Cows on official test are showing a high butter fat record.

Do you want some good foundation stock from high record A. R. O. breeding and choice serviceable dairy cattle, then we can supply the need. We have some choice young registered bulls now ready to head any dairy herd. Write for prices and particulars.

## TYSON & McKELHEER

Moxee City, Wash.

*Your Cream Check*  
Pay to Mr. Washington Dairyman \$  
*Bigger cream profits*  
TACOMA IMPLEMENT CO.

Scores of dairymen and farmers in Washington have seen their cream checks grow larger with a

## Great Western Separator

Proven by competitive tests everywhere to be the *World's Closest Skimmer*. Skims according to Nature's law—cream from the top—milk from the bottom. *No waste*—the self-flushing and self-draining bowl skims every drop of Milk.

## 30 Days FREE Trial

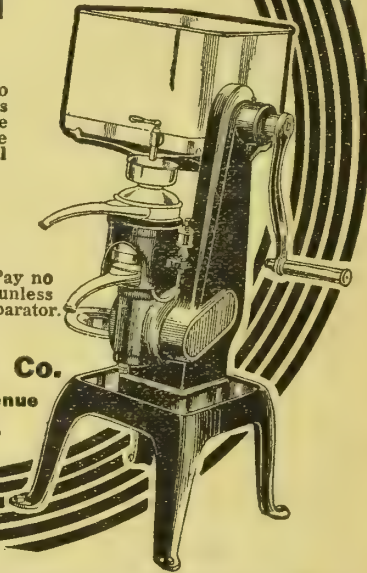
Try the Great Western at our risk. Pay no money down. No obligation to keep it unless satisfied that it is the World's Best Separator.

Write or call at

Tacoma Implement Co.

1521-1523 Pacific Avenue

Tacoma, Wash.



### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

#### Prices

For Ten Cows, Size 10x17½ in.

6 Sheets for \$ .25, Postpaid

15 Sheets for \$ .50, Postpaid

25 Sheets for \$ .75, Postpaid

50 Sheets for \$1.25, Postpaid

100 Sheets for \$2.00, Postpaid

Address

Northwest Horticulturist and Dairyman

P. O. Box 1604

Tacoma, Wash.

## ANKER HOLTH

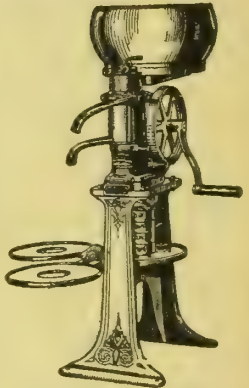
The world is not standing still. The people who inhabit it are not satisfied to go on in the old rut. They are progressive, they want advancement, and there is improvement along all lines.

Inventions of 20 years ago are out of date, they are a back number. The people are going to keep up with the times—that is why they are buying the Anker-Holth Cream Separator. It is the latest invention; it has improvements that make it as far ahead of all other separators as such separators are ahead of the first ones made.

When people pay their money for a Cream Separator they want the latest and best. That is why they are calling for the Anker-Holth from all sections; and the users are giving it the highest praise. Letters are coming in continually saying the Anker-Holth is the best separator made.

THE J. C. ROBINSON CO.

43 First St., Portland, Oregon



### GUERNSEY BULLS

Some very choice youngsters, Gov. of Chene breeding and out of imported dams. Here is your opportunity to increase the value of your future dairy herd.

### DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

AUGUSTINE & KYER,

First St., Seattle, Wash.

## BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best.

The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

## Stockmen We prevent and remove TUBERCULOSIS

IN CATTLE. Ask us to prove this claim. The discovery of Kar-Nitum marks an epoch in the world's veterinary progress. Write today for information folder. Kar-Ru Chemical Co., Tacoma, Wash.





of like quality from elsewhere, even at any price.

Those who are fortunate enough to become the owner of any of this stock will have good foundation on which to build up profitable herds for butter making.

### AYRESHIRE BREEDERS MEET.

#### 41st Annual Session Well Attended.

The 41st annual meeting of the Ayrshire Breeders' Association was held at Hotel Adelphia, Philadelphia, Pa., with over one hundred members and friends present.

The report of the Secretary showed 106 new members received the past year, and the Association in a flourishing condition.

The report of the French Silver Cup contest was most satisfactory, with four records that made the contestants champions of the breed. Owning to the generosity of Miss C. A. French of North Andover, Mass., in presenting the Association with \$1000 to add to her former gift of \$1500, all seven of the classes received a handsome silver cup.

Garclaugh May Mischief, owned by Percival Roberts, Jr., as a mature cow made a record of 25,329 lbs. of milk, and 894.91 lbs. of fat, making her the World's champion of the breed.

Miss Nox 3d, owned by John Simpson, Ariel, Pa., as a Senior four-year-old made a record of 15015 lbs. of milk and 576.94 lbs. of fat, making her the World's champion of the breed in her class.

Rena Ross 3d, owned by John R. Valentine, Bryn Mawr, Pa., as a Junior four-year-old made a record of 16114 lbs. of milk and 683.51 lbs. of fat.

Henderson's Dairy Gem, owned by Henderson Ayrshire Farm, Hudson, O., made a record as a Senior two-year-old of 17974 lbs. of milk and 738.32 lbs. of fat, making her the World's champion of the breed in her class.

Jean Armour 3d, owned by W. P. Schanck, Avon, N. Y., made a record as a Junior two-year-old of 14987 lbs. of milk and 599.91 lbs. of fat, making her the World's champion of the breed in her class.

Lily of Willowmoor, owned by J. W. Clise, Redmond, Wash., finished her five consecutive years' record, making 84991 lbs. of milk and 3362.35 lbs. of fat, making her the World's long distance champion of the breed.

There was great enthusiasm in the meeting over the progress the Ayrshire cow is making, and steps were taken to give her more publicity, and to provide funds for doing it.

The following officers were elected for the ensuing year:

President, Percival Roberts, Jr., Narberth, Pa. Vice Presidents, John R. Valentine, Bryn Mawr, Pa.; J. W. Clise, Redmond, Washington; Adam Seitz, Waukesha, Wisconsin and Hugh J. Chisholm, Port Chester, N. Y. Secretary-Treasurer, C. M. Winslow, Brandon, Vt.

### PUBLIC SALES OF REGISTERED STOCK.

There were recorded during the fiscal year of 1915, 65,680 purebred Holsteins, says Frederick L. Houghton, in Holstein-Friesian Register. The records of public sales in 1915 show sales at auction of about 6,441 head, at an average price of \$241 per head.

This average price shows a decline of \$14 over the previous year. The percentage of transfers recorded compared with the number of cattle recorded shows nearly 100 per cent.

Prices of Holsteins rise when transfers are approaching in numbers the total number of cattle registered or when exceeding the number recorded. The decline in average price at public sale for 1915 was due simply to the quarantines caused by the presence of foot and mouth disease and is rather small considering the area of territory involved and which practically prohibited all movement of registered stock and deterred many intending beginners from executing their plans. Trading has begun again, however, as the announced public sales in March to the number of fifteen plainly indicates, and a total of 40 sales between February 15th and May 25th. This number will probably increase to 75 by June 8th, when the high class sale at Detroit is to be held.

It is interesting to note, however, that the extent of sales at auction as compared with sales at private treaty is only about one-eleventh as large. The range of prices is far greater on bulls than on females.

There were sold in 1915 as shown by the transfer records 66,776 head and at auction 6,079 head. Thus 10.9 per cent only of the sales were at auction.

The popularity of the public sale is rapidly increasing and during 1915 sales at auction were held in many states and localities for the first time. In other lines of business, public sales are rapidly increasing and apparently affording the more equitable and desirable market. Notable instances are on every hand and include, as well as livestock, many staple commodities. Cattle breeders will do well to note and prepare for this change in selling methods and organize at favorable localities co-operative or mutual companies for selling at auction and on stated dates during the year.

### HAZELWOOD HOLSTEINS.

Skill and Persistency of the Trained Breeder and Owner J. L. Smith in Strong Evidence.

The Hazelwood Holsteins have been developed by careful, persistent efforts on the part of the owner, Mr. J. L. Smith, who has clear ideals and definite plans to which he adheres in the breeding and feeding operations and his manner of bringing his choice production to the notice of the public is most commendable.

Is was on a farm of over 300 acres near Carlisle, England, about nine miles from Greta Green, on the Scottish border, that Mr. Smith spent his early days with his father and an eminent herdsman—Tom Beaty. This farm wintered 80 head of cattle and about 350 sheep.

After leaving England, in his own words, writing to the Agricultural Age, Mr. Smith states:

"When I came to Illinois in 1880 I became interested in Shorthorn cattle and continued in that work until I came to Spokane in the fall of 1889, when with George M. Brown, we started in the dairy business. In the spring of 1890 David Brown came out and we started the Hazelwood company. Although I still have my interest in the company, I quit active

## Dairymen-



**HERE IS A BOOK THAT YOU OUGHT TO HAVE**  
Send for a Copy Now-

It contains some valuable information on feeds and feeding, together with plain, simple facts about dried beet pulp—the feed you will eventually buy. Your name and address on a postal will bring you the book free. Send for it now.



—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened. It will increase your milk yield from one to five pounds per day from each cow—and at the same time improve the health of your herd.

Order a single 100-lb. sack (either plain or with molasses) from your feed dealer and test it on one cow whose milk record you know. You'll be pleasantly surprised at the results.

### FREE! Our Booklet "Profitable Feeding."

It will pay you to send for and read this booklet. Do it now.

**THE LAROWE MILLING CO.**  
339 Central Building  
Los Angeles

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.

R. F. D. 1 Lynden, Wash.

### Position Wanted

As manager of stock or dairy ranch. Have had eleven years' experience in Washington. Reference on request.

W. H. MINER,  
Gen. Del., Tacoma, Wash.

### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.

### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE  
North Yakima, Wash.

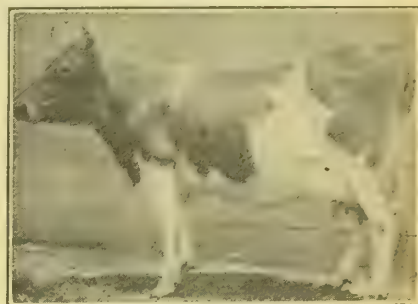
## Increase Your Milk Flow

Write for Nearby Dealers Name

### SHADY BROOK

The wonderful alfalfa and molasses feed. Hundreds of the most successful breeders and dairymen endorse it. Made by the largest exclusive feed mill in the world. Send for feeding directions and booklet No. 60

Shady Brook Milling Co.  
Walla Walla, Wash.



### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM  
Box 34, Milltown, Wash.

WANTED—To hear from owner of good farm for sale. State cash price and description.

D. F. BUSH, Minneapolis, Minn.



### "I Thought She Would Never Amount to Anything"

Many cow owners all over the country know what it is to see a cow that they were about ready to sell to the butcher become one of their best producers through a judicious use of the great cow medicine



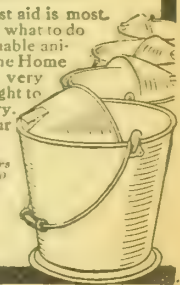
There is nothing mysterious about Kow-Kure; it is simply a medicine for cows that stimulates and builds up the vital organs and makes them perform properly. It has been found especially effective for the prevention and cure of such diseases as Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained Afterbirth, etc.

### GET THIS FREE BOOK

When a cow is sick, first aid is most valuable, and to know just what to do may save the life of a valuable animal. Our free treatise, "The Home Cow Doctor," has been very carefully prepared and ought to be in every farmer's library. Write us today for your copy.

Kow-Kure is sold by feed dealers and druggists in 2c and \$1.00 packages.

DAIRY ASSOCIATION CO.  
Lyndonville, Vt.



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work about seven years ago so I could give more time to the developing of the herd of Holstein cattle that

I had started some 10 years before.

"I had a type of Holstein in my mind I wanted to breed. They were



The great show cow Bonnie Lass Pauline of the Hazelwood herd in clover, and well she deserves to be, for her daughter was the Grand Champion cow at the World's Fair, San Francisco. Her record is 133 lbs. butter in seven days.

simply the old dairy Shorthorn of England, straight back and rump, broad across the loin and carrying well back with a long quarter. She was to have a big, deep body and good handling qualities. My reason for a straight back and hind quarters of good length was that I would get a long udder level and carried well up. I found that most cows with a short quarter and sloped rump would have an udder that was short and lacking in front, which was of bad shape, unbalanced and inclined to hang too low. This I did not like, and the longer this is bred into our herds the worse it will get to be.

"My new cow was to have a good open frame, regular dairy type with all-dairy qualities strongly brought out. I also wanted my young stock to be rather thick in the shoulders and broad in the chest so that she would have ample room for the heart and lungs, which is a very important makeup in a dairy cow. As these heifers come to producing this thick shoulder begins to disappear and in a very short time it gets all right and leaves it in perfect shape with strength to withstand the great producing period of her life, her broad, thick loin to carry the great weight of milk and udder and working machinery and the big body to carry the large quantity of food that goes to manufacture the big flow of milk.

According to my way of thinking this is the ideal dairy cow and show cow combined in one. When I first started to show these cows and heifers I had a good deal of opposition. Breeders told me they were no good as producers. They called them beef and made all kinds of remarks that were not all as complimentary as they might be, but today I am rather proud to find that many of our best writers and breeders advocate this very type of cattle. Why? Because they find that by far the greater per cent of the large record cows are just this same type.

In the Hazelwood herd during the fall and early winter of 1911 we tested five of our cows of this type with the following results: One 2-year-old, 26 pounds, her dam, 31 pounds; one 8-year-old cow with 36 pounds and one 5-year-old, 33.7 pounds, and 135 and 133 pounds in 30 days. Then

came the 3-year-old wonder Hazelwood Aaggie De Kol, with a seven-day record of 34.9 pounds. This was the world's record by three and one-half pounds over the next cow of her age. She was grand champion in 1912 state fair. The others were also all winners at Chicago in 1912. Since that time other records have been made and pretty nearly every cow that has made big records has been in our show herd.

One very important thing to remember is that you must not get your dairy cow ideas mixed with beef too much. Get a Holstein cow that is dairy and beef and does her double work at different times. "Don't get a cow with beef and dairy." When she is in the dairy business she must be doing dairy work and when she is dry is the time for her to go into the beef business and store up a lot of fuel for her next work in the dairy business. I contend that a cow built as I want her will readily respond to what she is wanted for.

"Don't get a cow with a beef frame, with a short thick neck. Get one with a moderate long neck, open backbone and ribs with lots of room between them. Have her with a pleasant countenance and large bright eyes.

At the big show at San Francisco Hazelwood breeding took three of the four champions and both grand champions; four out of the first six cows first saw the light of day at Hazelwood.

#### MILK AND CREAM CONTESTS

Competitions in Quality of Milk Among Dairymen Found to Have Great Educational Value.

Milk and cream contests have been found to be a very valuable means of inducing dairymen to take greater pains in the production and handling of milk. In a new professional paper of the U. S. Department of Agriculture, Bulletin No. 356, the axiom is quoted that "Education accomplishes more than legislation." The law, it is said, can of course be applied to glaring insanitary conditions, but after a certain degree of cleanliness has been reached, subse-

## Heavy Yeilding Registered Holsteins Pontiac and Dekol Breeding

A very large proportion of our cows have A. R. O. records and every one in milking condition is making a very satisfactory margin of profit, records up to 70 lbs. milk per day.

Our entire herd is vigorous and developed for long time profitable dairy work.

From many years' experience we have found that dairying is profitable in proportion as cows of a fixed standard of production are bred and kept in the herd. (For years our sires have been selected with that purpose in view.

The prices bidders at the sales have made when taking over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

**A. E. SMITH CO., Sumas, Wash.**

(or White Building Seattle)

Please mention this paper when writing.

## ALBERS PERCHERON HORSE FEED

This feed is nothing more nor less than ALL GRAIN CHOP mixed with Alfalfa Meal, Soya Bean Meal and

## CANE MOLASSES

The Molasses makes the feed palatable, aids in the digestion of the other grains and keeps the horses in the best of condition.

IT WILL PAY YOU TO USE THIS FEED

**Albers Bros. Milling Co.**

SEATTLE  
TACOMA  
PORTLAND

SAN FRANCISCO  
LOS ANGELES  
OAKLAND



#### "Selecting and Developing the Jersey Herd"

Is a booklet by Prof. Hugh G. Van Pelt. It tells how you can build a well-developed, money-making Jersey herd by proper selection and judicious breeding. The future of your dairy herd depends upon how you select your foundation animals and how they and their offspring are developed. The Jersey cow combines beauty with dairy conformation. Healthy, vigorous and profit-producing, she lifts the mortgages and increases bank accounts. Send for book today.

American Jersey Cattle Club  
37 West 23rd St. New York City

#### "THE MEADOWS"

Carefully selected Dairy Stock of all kinds for sale. We try to give 100 per cent. satisfaction.

JOHN F. JANSSEN,  
"The Quality Buyer"

R. F. D. No. 5, Seattle, Wash.

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
YAKON, WASH.  
B. M. SHIPLEY, Proprietor.  
Haller Bldg., Seattle

#### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,000 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,  
Box 56 Underwood, Wash.



quent improvement must be obtained in other ways.

The first milk and cream contest was held in 1906 during the National Dairy Show at Chicago. Since then there have been many others and the method of scoring the exhibits has gradually been improved. Under the present system, out of a total possible score of 100 points, 35 are allowed for the bacterial count, 25 for the flavor and odor of the milk, 10 for the absence of visible dirt, 10 for percentage of fat, 10 for percentage of solids not fat, 5 for acidity, and 5 for the appearance and condition of the bottle and cap.

To obtain a perfect score for the bacterial count the milk must contain less than 500 bacteria per cubic centimeter. A bacterial count above the local legal limit results in a score of 0. The deductions from the possible score of 25 for flavor and odor are made according to the conditions found. This is also true of the examination for visible dirt. For this the milk is allowed to remain for some time undisturbed and the bottom is then examined very closely for the slightest movable speck. Four per cent, or more, of fat in the milk results in a perfect score of 10; less than 2.7 per cent in 0. To obtain a perfect score for the solids not fat, the less than 7.8 per cent is counted 0. In the case of cream there is no credit for solids not fat, and the percentage of fat counts 20 points instead of 10. To obtain a perfect score for acidity, the percentage must be 0.2 or less. More than 0.24 per cent is counted 0.

The same score card is now being used for market milk and for certified milk, but in most of the contests those who compete in the certified class are not allowed to enter samples in the market class.

The educational value of these contests is indicated by the fact that almost invariably dairymen who have had experience in such competitions obtain higher scores than those who have not. On the other hand, the contests are used also to point out to consumers the fact that clean milk is more difficult and expensive to produce than dirty milk.

#### THE JERSEY CATTLE CLUB.

The American Jersey Cattle Club is beginning to realize that its operations have been too exclusive. There are 23,000 Jersey breeders in the United States and only a few more than 500 are members of the Club. The breed is not growing rapidly in popularity as compared with other dairy breeds and leaders in the organization realize that a change of policy and of activity is important. A writer in the Dairy Record, St. Paul, states:

"Every one interested in the dairy business will welcome the activities of the Jersey club, and will stand ready to lend a helping hand to any movement that will contribute to the profit and permanency of the dairy industry.

"It has been said that the farmer's business in his own—he can do as he pleases and is independent; if he fails, it is no man's concern; if he succeeds, it is his own advantage.

"But this isn't true. The prosperity of the nation and the very life of the people are dependent upon his successful tillage of the soil, and the production of food for them. True,



## Stop Throwing Money Away-

**EVERY** day you delay putting in STAR BARN EQUIPMENT costs you cash money. You're throwing away the extra profit that more milk—better milk—healthier animals—and labor cut in half, gives. All these things come when you install STAR Equipment. Ask users.

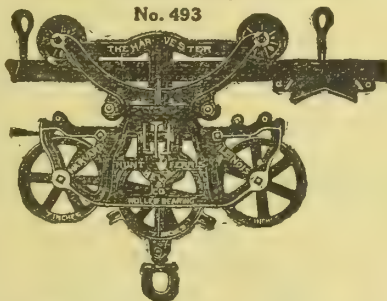
And the actual cost of getting more out of your herd with a smaller expenditure of time and labor is so small that you simply can't *afford* to delay one day longer.

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## STAR Steel Stalls. Stanchions and Litter Carriers

STAR STEEL STALLS come assembled—ready to erect. They are sold on the Unit System which lets your equipment grow with your herd. The Star Alignment Device—Arched Construction and Star Curb Clamp will interest you. Each Star Stall is equipped with the wood-lined GIANT STAR STANCHION with the positive One Hand Lock with quiet Double Chain Hanging and Automatic Sure Stop—Adjustable and strongest stanchion on the market. The STAR Line of LITTER and FEED CARRIERS fits every need—Roller Bearings—Double Lock Tubs—Swinging Booms—everything in Litter Carriers and built on Star quality and features. Get the catalogues.

### Harvester Hay Carrier No. 493



Biggest in size and value. Roller Bearing and built for heavy duty. Ask your dealer or write us for details.

DAIRY MACHINERY COMPANY, Agents, SEATTLE, WASH.

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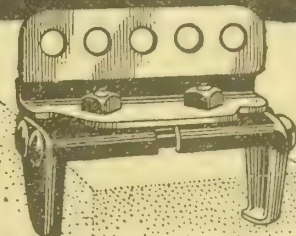
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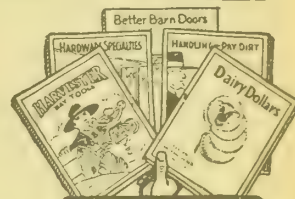


## The STAR Curb Clamp

(PATENTED)

**I**NSTEAD of using templets and setting anchors the new Star Curb Clamp enables you to go right ahead and finish up your curb right along with the rest of the concrete work and know that the stall arches will fit when they arrive.

To set the stalls with the Star Curb Clamp just drop them in place over the curb—tighten the draw bolts—and your stall is anchored so securely that its practically a part of the curb itself. And—if desired, the stall arch can be removed just as quickly as it was placed there.



Write for Literature FREE—a 159 page, profusely illustrated book of valuable barn data if you write, mentioning the number of cows you keep, whether you intend to build or remodel your barn and when. Also mention what you are interested in, Litter Carriers, Hay Tools, Barn Door Hangers, and we will include catalog of same.

he owns his land, but after all, he is the servant of the people, and their welfare demands that he give to his farm the best management possible in order that the interests of business and society may be well served.

"From a selfish viewpoint the actions of the Jersey Cattle Club is a matter of personal concern, but from the viewpoint of the dairy industry its interests can expect that the Jersey Cattle Club and all other breed organizations shall take an active interest in all matters that pertain to the advancement of dairy interest and dairy success."



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Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

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Pearsall's Favorite Ensilage Corn  
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Acclimated—10th crop—well matured—perfectly dry. It will grow. Price 20c per pound f. o. b. Order early to insure supply.

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out of large litters from big prolific sows and a big well bred sire. Some February pigs that are fine. Prices reasonable and satisfaction guaranteed.

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Castle Rock, Wash.



## POULTRY DEPARTMENT

For information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### ESSENTIALS FOR CHICKS.

By Helen Dow Whitaker, Head of Poultry Department, State College of Washington.

The primary aim in the management of chicks is growth. The growing period is the critical period in bird life. Although not fully developed and matured until the twelfth to fifteenth month a chick leaps into approximately full size in the short lapse of six to eight months.

Birds are the most active, maintain the highest bodily temperature, and perform the most rapid digestion of food of all the domestic animals. It follows that all their functional activities, that is, their bodily processes, must be rapid. It also follows that results of wrong care or feeding are not only more quickly disastrous, but the disaster is more likely to be lasting than with other animals.

#### Muscle and Frame Builders.

A good growing ration for the first three weeks of a chick's life may be made up as follows: Of cracked wheat or bread crumbs and rolled or steel cut oats, feed equal parts by weight. With every ten pounds of brand mix one pound of beef scrap and one pound of granulated bone for the first mash to be fed dry after the eighth day. Chicks may eat an excess of bran, which is rather bulky for the nourishment it contains. Use judgment in not letting them keep their crops crammed uncomfortably full of dry bran mash all day long. Note that the beef scrap should be sifted through a screen (fly-size) and only the finer portion used for the youngest chicks. Also note that the granulated bone is pretty nearly a necessity for closely yarded chicks, carrying, as it does, about 25 per cent of protein and 50 per cent of lime. Furthermore, it contains 24 per cent of phosphoric acid, and we are coming to believe the phosphates play an important part in digestion, and hence nutrition.

Of sweet or sour milk feed all the chicks will drink from the first day, but it is preferable to use it always sweet or always sour for the same lot of chicks.

#### Untainted Foods.

Of the chicks that are killed by spoiled foods, and their number is large, most die from eating fertile eggs tested out of incubators, poor grade beef scrap, decaying vegetation, mouldy or musty corn products, wilted green food, mould in the straw litter on their brooder floor or in the rotted straw of some old manure pile in which they scratch.

Of eggs tested out from incubators, all fertile eggs should be discarded, and all non-fertile eggs to be used in feeding chicks immediately boiled. They will then keep in a dry, cool place for ten days or more. Only the highest grade beef scrap should be used for growing chicks. In any case, never feed poultry beef scrap that has lumped in the sack.

Unless stored in a dry place, cracked corn and corn meal readily absorb dampness and mould results. Any cracked corn showing bluish discoloration or any corn meal containing cobweb-like strings is unfit to feed

growing chicks. Corn products frequently heat in the sack and therefore, all corn products and all prepared foods containing corn in any form should be carefully and frequently examined before feeding. It is further recommended that poultry men buy corn in small quantities in damp or hot weather unless facilities for handling it are such as to safeguard it from spoiling.

#### Variety in the Ration.

A chick will not only eat more, but will actually digest a greater percentage of what he eats of a ration which affords variety than of one composed wholly or mainly of one or two grains. Reasonable variety is afforded in the following ration, which is recommended to be fed from the third to the eighth week to growing pullets.

**Grain**—Equal parts of wheat, corn, and oats (rolled oats and cracked wheat to be gradually replaced by sprouted oats and whole wheat during the fourth and fifth weeks).

**Mash**—Five lbs. bran, 3 lbs. corn meal, 2 lbs. wheat middlings, 2 lbs. ground oats, 1 lb. granulated bone and 2 lbs. beef scrap, 1 oz. dairy salt.

**Milk**—All the chicks will drink.

### HATCH WINTER LAYERS.

#### March to May the Season.

The farmer who is successful in getting his hens to lay when eggs are high in price, hatches the chicks early enough in the season so they will have time to mature before cold weather sets in, but not so early that they will mature in warm weather and when cold weather comes stop laying and go into moult, says Mr. Dryden of O. A. C. Experiment Station. This is an important point for the poultryman.

For Leghorns, and other small

WALTER HOGAN, JUDGE PANAMA-PACIFIC INTERNATIONAL EXPOSITION UTILITY POULTRY SHOW, offers eggs and day-old chicks from his 200 to 265 egg type S. C. W. Leghorns, as scored by

## The Call of the Hen

Would you like a few 200 to 265 egg type cockerels to improve and put new blood in your flock? Here is a chance to get them by buying eggs or chicks. You would also get some good pullets to breed to cockerels from your trap-nested stock.

Chicks are all sold up to the first of May; after that date they will be \$10.00 per 100.

Eggs are all sold up to the 10th of April; after that they will be \$5.00 per 100.

AFTER FIFTY-SEVEN YEARS OF POULTRY BREEDING, I should have the best laying strain on the Coast. MY CUSTOMERS SAY I HAVE. Address

### WALTER HOGAN

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from my 3000 S. C. White Leghorns means that they are well hatched, from strong, hardy stock, bred for egg production, vigor and good size. I guarantee safe arrival in good condition all chicks you order. Also send free with every order my book on "Raising the Chicks."

Price to May 1st, \$11.00 per 100.

Orders of 1000 chicks and over, \$10.50 per 100.

Write now for free catalog with over 100 testimonials.

### Oak Heights Poultry Farm

CAPT. A. WALDWICK, Proprietor  
R. F. D. 3, Box 67A, Tacoma, Wash.

breeds, the best time on the average to hatch them is about the beginning of April or from March 20 to April 20. Chicks that are hatched within these dates with the proper care throughout the summer, will make the best late fall and winter layers. If hatched a month earlier they will mature early and usually go into a moult and stop laying when eggs are at their highest. For heavier breeds that require longer to mature, the

hatching season should be earlier. For Plymouth Rocks and breeds of that size, about the middle of March is a very good time, or any time between March 1 and April 1. There is very little profit in pullets that have been hatched later than the first of May. While it is possible to hasten or retard laying maturity by regulating the feeding and care, with good average care the dates given above will be about right.

## LILLY'S Holly CHICK FOOD

for 15 Years

The Standard of the West

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**SOFT SHELLED EGGS.**

The first and usual cause of soft shelled eggs is that the bird is too fat. The muscular movement of the oviduct is hindered by layers of fat, and instead of the egg being controlled by firm muscles it merely slips through a flabby mass without getting its shell on. The difficulty will vanish if the birds are made to scratch hard in a clean dry straw litter for all their grain, and the ration fed is not over fattening. Sprouted oats will be a valuable food, as they are less fattening than either wheat or corn. In some cases it might be advisable for a few days to omit all mashes, especially moist mashes, from the ration.

The second source of soft shelled eggs is lack of lime in the hen's ration. In this case the shell secreting part of the oviduct fails to do its work because of lack of material. Clam shell is not so readily soluble as oyster shell. What is commercially known as beach shell is preferable to clam shell. It is claimed by some poultrymen that the use of a limestone grit also helps to supply shell material to the hen. It is often recommended that old plaster be broken up and thrown in a box in the pen for birds to pick at as a source of lime.

The third cause of soft shelled eggs is the forcing of hens for too frequent egg production. A second yolk breaks off from the ovary and drops into the funnel of the oviduct, and the first one is forced too rapidly on its way for it to be completely formed when laid.

The fourth cause of soft shelled eggs comes from scouring, that is, from feeding a too loosening ration to your birds. Beets or mangels will sometimes produce this result. The droppings, normally, should be a dark slate or dull black color, firm enough to maintain a spiral shape as seen on the dropping boards.

**EGGS STANDARDIZED.**

**Shipments Containing More than Five Per Cent of Bad Eggs Will Be Regarded as Violating the Food and Drugs Act.**

The Department of Agriculture has had under consideration for some time the application of the Federal Food and Drugs Act to the shipment in interstate commerce of eggs in the shell, especially the two classes of eggs known in the trade as "current receipts" and as "rejects" from candling rooms. "Current receipts" contain at different seasons of the year varying proportions of eggs which are filthy, decomposed, or putrid. "Rejects" from candling rooms, as a rule, contain large proportions of eggs which are filthy, decomposed, or putrid, and very small proportions of eggs suitable for consumption.

Under the Federal Food and Drugs Act, eggs, in common with other articles of food, are adulterated if they consist wholly or in part of a filthy, decomposed, or putrid substance. Section 2 of the Act prohibits the shipment in interstate commerce of foods which are adulterated and it is plain that this prohibition applies to the shipment in interstate commerce of "current receipts" or of "rejects" from candling rooms or of any other grade of eggs in the shell unless the filthy, decomposed, or putrid eggs have been removed.

Eggs which contain yolks stuck to the shell, moldy eggs, black spots,

**EGGS****Cockerels**

White Wyandottes and B. P. Rocks. Good stock. Price \$1.00 and \$2.50 per 15.

Some fine youngsters for sale. Write for prices.

**C. E. CORNWALL**  
So. 64th and Tacoma Ave.  
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**Cockerels EGGS**

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Write for prices. Single setting or lots.  
**FRED A. JOHNSON,**  
518 35th St. Tacoma, Wash.

mixed rots, addled eggs, black rots, and any other eggs which consist wholly or in part of a filthy, decomposed, or putrid substance, are considered adulterated.

**DECEMBER EGG RECORD.**

350 White Leghorns Brought \$192.90.

In our January issue The Northwest Horticulturist and Dairyman I have been reading of the experiment at the Western Washington Experiment Station on egg production, which looks good comparing the two pens you have shown up in the article.

Now I would like to have you compare with others for December a record of my flock of 350 S. C. W. L. pullets hatched April 1st and April 23rd, 1915.

They are kept in a house 14x64 ft., 9 ft. high in front and 6 ft. in rear. Dropping boards running full length of house in eight foot sections, hung on hinges so they drop down and are cleaned thru doors in rear wall.

Nests are built in sections so they can be taken apart to be cleaned and are set up against the walls. All hoppers and water cans are up on stands about two feet from floor so the whole floor space is free for scratching material which is good clean straw about 8 to 12 in. deep.

I keep before them in self feeding hoppers all the time a dry mash composed of (by measure) 2 parts alfalfa meal, 2 of bran, 2 of corn meal, 2 of superfine white middlings, 1 of soy bean meal, 1 of beef scraps and a small amount of salt.

Shell, grit, charcoal in separate hoppers. Fresh, clean water at all times. All the kale they could eat at noon every day. Grain feed, wheat 2 parts cracked corn 1 part. Feed 14 quarts about 3:30 p. m. and 8 quarts about 8 a. m.

The front is constructed of about one-third openings covered with 1-in. mesh wire and muslin curtains. For the month of December we got 5645 eggs or 470% doz. for which we received an average price of 41c per dozen, or \$192.90.

Our feed bill for the four months of September, October, November and December was \$170.05 or an average of \$42.51 per month.

We have been on our ranch three years next March and think we are making a pretty fair showing for the time we have been at it.

Last year our flock of 215 S. C. W. L. pullets averaged 174 eggs for each hen which we thought was pretty good.

**GEO. B. PHILPOTT,**  
Charleston, Wash.  
R. R. No. 1, Box 33.

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**UPPER'S LEGHORNS**

You're sure that they are bred true to type, SURE of their quality, SURE that they possess constitutional vigor, SURE of their productiveness and SURE of their winning and profit producing ability.

Our matings this year are the best we have ever made.

Our layers for years have been Selected by the Hogan system.

Eggs and baby chicks. Write for prices. I have pleased others—I can please you.

**R. R. UPPER** Orilla, Wash.  
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DAY OLD CHICKS

From fine laying strains of Barred Rocks, S. C. Reds and White Leghorns, and eggs by the setting or thousand. For particulars write

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**10c** from pure bred heavy laying White Leghorns. Satisfaction and safe arrival guaranteed.\*  
Hatching eggs, 15 for \$1.00; 1\$, \$5.00.

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THE MONEY MAKING INCUBATOR

For Chicks, Ducks, Turkeys, etc.

It has many exclusive features. Automatic regulation of heat and moisture. Egg level ventilation. Special heating system, giving same degree of heat to every egg. Does not depend on skill or experience. Just follow simple instructions.

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PORTLAND OREGON

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Orpingtons  
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Write for Description and prices

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Box 101, R. F. D. 1, (Near Seattle)  
Mrs. C. M. Whitman, Prop.

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Not the chicks that die—not the chicks that are stunted because of improper nourishment when they're growing so fast. The chick needs properly-proportioned food to make the bodily heat—to develop flesh and feathers. Grain alone is not enough.

Albers Chick Starter should be fed from the third to the tenth day after hatching, the chick absorbing the yolk for the first three days. Then begin with Albers Chick Food, feeding it up to six weeks.

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Made from Clean Grain—No Grit or Shell

Albers Poultry Foods are produced in the largest and best equipped plants in the West. All ingredients are mixed by machinery, from formulas prepared by practical poultrymen. There is no guesswork to Albers Foods. Every sack is uniform.

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Follow the example of the largest money-making dairies in the West, and save half of your feed bills.

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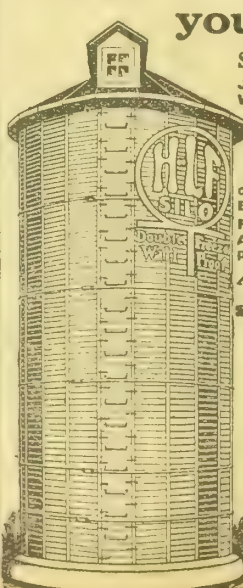
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John Loritz, Hebron, N. D. Saved \$260.

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O. A. Towell, Chase, Neb. Saved \$100 over Chicago prices.

E. E. Baker, Stratton, Colo. Saved \$300.

Frank Easter, Pine City, Minn. Saved \$150.

A. C. Grande, Bennep, Mont. Saved \$8 per M.

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WRITE TODAY for Folder on H-L-F Silo, massively strong, double wall, freeze-proof.

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Bills of material sent promptly in answer to this advertisement WILL BE FIGURED AT LOW WINTER PRICES. Delay and you'll get our best price, we'll keep as low as we can, but you can be sure IT WON'T BE AT THE LOW WINTER PRICE. We must advance our prices when present stocks are sold out.

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Send rough sketch of floor plan of house or barn you want, indicating style of roof, and H-L-F experts will prepare, ABSOLUTELY WITHOUT CHARGE, a blueprint sketch showing just how building will look, together with layout of rooms drawn to scale. We'll quote also freight paid, delivered price on all necessary lumber, millwork, hardware, paint. This is a new service and absolutely free. We'll quote materials MADE-TO-MEASURE, the new H-L-F way that cuts the carpenter bill in two.

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Capital \$1,000,000. Not in any trust or combine

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Gentlemen—Please send me the following:

☐ Freight-paid price on bill of materials enclosed (free).

☐ Blue print, plan, drawn picture of house and freight-paid price on materials. I am enclosing rough floor plan, etc.

☐ New Millwork Catalog (free).

☐ Red Cedar Post Price List (free.)

☐ Prize Plan Book (new edition), send 10c.

☐ Barn Builder's Guide, (4c.)

☐ H-L-F Silo Folder and special offer with price of

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# NORTHWEST HORTICULTURIST

POULTRY  
AGRICULTURE, STOCK & DAIRYMAN  
HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., APRIL, 1916

No. 4

## WATER POWERS.

Water powers in the different states up to this date have been turned over to private corporations for a "song." in the State of Washington the cumulative wealth to be derived from water power sources would have gone a long way to pay the state taxes for future generations had sites been leased instead of deeded.

There is now a measure before Congress known as the Shields Bill which would give the power interests without compensation, the use of water power on navigable streams. Under it, private corporations are authorized to seize upon any land, private or public, they choose to condemn. This Government should control and conserve all water powers under its jurisdiction. It is a leading basis for revenue, for times of peace and in carrying out preparedness for defence. From this source of power future manufacturing plants will be operated and many of the railways are likely to obtain their operating power.

Corporations should be encouraged to develop the water powers as needed but strictly under state or government control in a manner that will be just and fair to both sides considering the future cumulative wealth to be developed by community interest and the welfare of future generations from the government stand point. The Shields Bill should

be defeated. Look it up and express yourself to your congressmen. It is up to farmers to organize and relieve themselves of excessive taxes. The water powers can be made to help pay government expenses but the farmers as well as others must act promptly.

## PREPAREDNESS IN PRACTICE.

Preparedness has become the watchword for various proposed endeavors and farmers are slowly but surely lining up for effective work in their own behalf. Standardization of the various farm products is progressing in good shape. The producer who does not ascertain what is a desirable market standard quality for any line he prepares for the market and then works up to that standard is considered a back number.

Preparedness to improve the dairy herd, to obtain feed at less cost and to finance the different farm projects at lower interest rates has taken deep root with a large number of farmers, and in many cases there is concerted efforts to accomplish desirable results within a short course of time. Preparedness to shorten the channel between the producer and consumer is being undertaken by various associations, particularly for the more perishable products. This does not mean the destruction of necessary mercantile

systems but to compel the elimination of needless expense, to help in every way possible to afford a more rapid movement of produce.

The cost of getting any farm produce into the hands of consumers is too large an item and is equivalent to a tax which directly or indirectly contributes to the building of cities. The farmers realize they are bearing too large a share of it and are trying to solve the problem of reaching consumers with the least expense that is possible for satisfactory results. This means first standardization and then organization for specific purposes according to the requirements of the specific locality involved.

Now is a good time to take part in preparation of policies which will constitute the frame work for political parties and politicians during the coming years.

See to it that the farmers interests are well guarded. As a rule the farmer does not take the interest nor time, due, in his part, to map out political policies. It will pay well to do so.

Numerous improvements are prospective but concerted efforts are best directed on one or two things at a time. Just now the question of providing a lower interest rate is paramount. The farmers can be financed at just as low a rate as can any of the largest corporations if they make the proper preparation

and plans to carry such movement into effect.

## THE MARKETING PROBLEM.

The 12,000 farmer dairymen surrounding Chicago get on an average 12½ cents a gallon for the milk they produce for city supply. The consumers are paying on an average of 32 cents a gallon which allows 19½ cents a gallon for the dealers who distribute.

The producing dairymen and the consumers have become convinced of the fact that a channel reaching from one to the other which costs the price of production and half as much more is too expensive. The first step towards reform appears in the way of a strike on the part of the dairymen who want the consumers price divided by 2 being willing to allow 16 cents a gallon for delivery when they get 16 cents a gallon for production. The next step for the dairymen will be to organize, standardize their product and adopt a system which will avoid much unnecessary duplication of travel when delivering, fix a cash system of sale. They will then be in position not only to make prices for themselves and dealers, or for delivery, but might deliver a better average product to the consumer at a less price than he is now paying. This is only one example of solving the problem of reducing cost between the producer and consumer. In this illustration the consumers help lies in adhering strictly to a cash basis. The time has come when farmers will realize a greater measure of profit by working together, uniting their efforts, organizing for specific purposes, then standardize their products and assume a commanding position in the business of marketing than they will derive from increased crops.

The penalty for unwillingness to get together is too heavy and in reality should be unnecessary.

## TRUCKS FOR LIVE STOCK.

Auto trucks are now being used to haul live stock to market on the hoof. In some parts of the country regular calls are being made at stated intervals. The farmers get market price less cost of the hauling which frequently pays them better than to take time from pressing duties on the farm.

The United States Department of Agriculture states that turnip rape seeds imported from Argentine and Japan are being sold for winter rape, and those who expect the turnip to take the place of winter rape will be disappointed.



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# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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## CANNED FRUIT AND JUICE MARKET.

The present outlook for a market  
for canned fruits, jams, jellies and  
fruit juices is excellent. Those who  
attempt to put up goods in this form  
to sell should endeavor to establish  
a brand, adhere strictly to rules gov-  
erning a standard product on which  
some margin of profit may be real-  
ized. The growth of a business of  
this kind requires energy, push and  
time.

The best time to spray for the oys-  
ter shell scale is about the middle of  
May or when these insects are newly  
hatched. There is too much waste in  
sprays which should be applied only  
for specific causes.

## THE RURAL CREDIT QUESTION.

The present proposed rural credit  
law known as Holles' bill (S. 2986)  
does not suit farmers organizations  
and many of the leading farmers  
because the frame work permits of  
too much expense in its operation  
and there seems to be an avenue  
open for speculation. Neither does it  
provide for short time loans at low  
rates which in this country is equally  
necessary for the farmer of limited  
means as is the long time loans.

The farmers in the United States  
as a class, do not ask special con-  
cessions, but they want a proper  
frame, enacted into law, which will  
permit them to finance themselves  
both for short time and long period  
loans. When their operations are at-  
tractive outside capital will reach  
them through other channels.

We invite discussion on the rural  
credit question in the columns of this  
paper. Our Senators desire to know  
the wishes of the majority of the  
farmers on the rural credit question.

## HENRY WALLACE.

Henry Wallace, the senior member  
of the firm of Wallace's Farmer, who  
passed away some weeks ago, finished  
a life of very useful service to his  
fellow men. His publication is strict-  
ly high tone, practical and standard  
as a guide for the farmers of the  
middle west. He was a constant ad-

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

vocate of the rights of farmers, be-  
lieved in just and fair play. His in-  
fluence will continue for good for  
generations to come.

## OWNERSHIP OR CONTROL.

While trying to reform the market-  
ing systems which are too wasteful  
and expensive many well meaning  
people are advocating state ownership  
of numerous public utilities. Their  
plans if carried out would be largely  
experimental and might prove to be  
more expensive than the system now  
in practice. It has been definitely  
determined that the state and the  
government have power to control  
corporations and the proper regula-  
tion or control of these seems to  
serve, in many cases, better than  
would government ownership.

When people learn to work har-  
moniously together by groups for the  
accomplishment of certain objects  
then many of the present difficulties  
are easily overcome.

We can learn much from the Danes  
who have successful co-operative  
creameries, co-operative butter and  
egg marketing associations and co-  
operative slaughter and packing  
houses. Their co-operative schemes  
are not carried on through govern-  
ment ownership of any utility but  
there is central control supported  
both by the willingness of the people  
to work together and suitable laws  
serving as frame work for the desired  
purpose. The control of farm and  
food products should be more direct-  
ly represented by producers and con-  
sumers. That would not eliminate  
the necessary merchants.

## MARKETING PLAN OF THE FRUIT GROWERS' AGENCY.

Messrs Basset, Moomaw and  
Kerr representing the office of mar-  
kets and Rural Organization Depart-  
ment of Agriculture have devised a  
plan which in their opinion will com-  
mand general co-operation among the  
selling agencies and the apple  
growers to the general satisfaction  
of all interest concerned. From in-  
vestigations conducted last fall they  
found that the difficulty in lining up  
the various local associations for gen-  
eral co-operation on a large scale was  
caused from not having a satisfactory  
basis on which to fix prices. The  
bureau which these men represents  
will attempt to supply the necessary  
information about market conditions  
which will form not only the basis  
for price making but serve as power  
for central control over the different  
selling agencies.

In connection with this it becomes  
necessary for the growers to agree  
to have their crop handled as in unity  
with power by a representative to fix  
the price or not as they choose and  
assuming responsibility accordingly.

Whether or not the plan as to be  
carried out will accomplish all that  
its originators desire it is a step in  
the right direction. It behooves all  
leading apple growers to thoroughly  
investigate all detail provisions and  
then act according, promptly.

A satisfactory selling system for all  
the apple crop of the Pacific North-  
west can only be attained by experi-  
ments and growth. Meanwhile dis-  
appointments will continue until the  
real difficulty is ascertained and  
remedied.

## THE SCAPE GOAT.

At a meeting of farmers and the  
rural development bureau of the

Commercial Club held at Tacoma re-  
cently the commission merchants, as  
usual, were blamed for disappointing  
results to the growers for produce  
sent to the markets.

Instances have been traced where the  
fault apparently did lay with an in-  
dividual firm, but in most cases of the  
short comings for low prices to pro-  
ducers the cause can be attributed  
to incapacity of the markets, extrava-  
gant wasteful system over which the  
merchants have little or no control or  
a lack of standard quality of product.

Reform is needed all along the line  
meanwhile the merchant represents  
the goat and having been blamed for  
all marketing difficulties repeatedly  
and from many sources, have become  
used to it and takes the accusation  
as a matter of course.

## WOOL GRADING.

In Australia, the growers have  
found it distinctly advantageous to  
have the grading done in the shear-  
ing sheds and to sell graded wool.  
The extra cost, it has been found, is  
more than offset by the increase in  
the market price of the properly pre-  
pared product. In this country also  
steps have been taken to test the  
plan on a commercial scale, but con-  
certed action on the part of a large  
number of influential flock masters  
is regarded as necessary for any  
radical change in the prevailing prac-  
tice of marketing the wool on a quan-  
tity instead of a quality basis.

This is, say the specialists, no  
reason why the individual grower  
should not grade his wool for his own  
information and profit. Once he has  
done this, he will see that profits  
depend upon the character as well  
as the number of fleeces and he will  
turn his attention to their better-  
ment. It is generally admitted that  
Australian success in sheep breeding  
has been due in large measure to  
the object lessons afforded by the  
grading sheds.

## FOOT AND MOUTH DISEASE.

### Long Fight Against Stock Plague Ended by Removal of all Quar- antine Restrictions.

The long fight against the foot-and-  
mouth disease is over. The Secretary  
of Agriculture has issued an order  
which on March 31 removes all foot-  
and-mouth quarantines and restric-  
tions against the shipment and move-  
ment of live stock. The order signed  
specifically removes the quarantine  
from a small territory in Christian  
County, Illinois, the last area which  
was under suspicion. Along with  
the removal of this local quarantine,  
the various Federal orders restrict-  
ing shipment of cattle are rescinded,  
so that dealers can now ship their  
cattle as before the first quarantine  
was imposed.

Upon notification that the United  
States is free from the disease, all  
foreign governments which have  
placed embargoes on American cattle  
are expected to remove these em-  
bargoes, so that cattle raisers will  
then be able to resume shipments to  
these foreign countries.

## FEEDING YOUNG PIGS.

It pays to feed the young pig as  
much as possible, both thru the  
mother and later directly from the  
trough. Never again will he make  
such rapid and cheap gains and it  
pay to keep him growing as rapidly  
as possible while young. To this

end the sow should be given all the  
good milk producing feed she will eat.  
When the pigs are about a month  
old they will begin to need something  
in addition to the mother's milk, even  
though she is well fed, says L. A.  
Weaver, an Experiment Station work-  
er.

As soon as the pigs will eat they  
should have skim milk in a shallow  
pan. Then a slop made of milk,  
some shorts, a little bran, and some  
oil meal or tankage. If this is fed  
with some grain and pasture the  
pigs will reach a condition to be fitted  
for the market in five or six months.

## OX WARBLER IN CATTLE.

Reduces Milk Production and Retards  
Growth of Animal as Well as  
Damaging Hide.

The ox warble is becoming too  
prevalent in the Pacific Northwest.  
These ox warbles are the whitish  
grubs or maggots which develop from  
the eggs deposited by certain flies  
known as warble flies or heel flies  
and which injure the hides, reduce  
milk flow and retard the growth of  
the animals. The maggots are com-  
monly found just below the skin on  
the backs of cattle, in the spring.  
The presence is revealed by local  
swellings about the size of pigeons'  
eggs, each with a small central hole  
or perforation through which the  
maggot breathes. From this hole the  
maggot, when mature, emerges to pu-  
pate to the adult or fly stage. When  
full grown the grub is about three-  
fourths of an inch in length.

### The Damage is Serious.

Until recently warbles were not re-  
garded as serious even in the South,  
because it was thought that the loss  
they occasioned came principally from  
the damage they did to hides. Even  
this loss in the aggregate, however,  
is important, as hides show warble  
holes three to six months in the year  
and dealers pay from 50 cents to  
\$1.50 less for hides that show even  
moderate warble infestation. In many  
cases the scars left after the holes  
have healed cause buyers to cut  
prices considerably.

The loss from the warble, however,  
is by no means limited to the holes  
the maggots cut in the hides. Ex-  
tensive investigations in Germany and  
Denmark indicate that the losses  
through reduction in milk supply in  
dairy cattle, the retardation of growth  
in young stock, and the loss of flesh  
in all classes of animals are twofold  
greater than the damage done to the  
hides. In some of these tests the  
early extraction of the grubs from  
the backs of infested cattle resulted  
in an increase of nearly 25 per cent  
in the milk production. Animals  
from which the grubs had been ex-  
tracted showed gain of more than 5  
per cent in weight over similar ani-  
mals in which the pests were allowed  
to develop normally.

### Methods of Controlling Warbles.

Systematic extraction and destruc-  
tion of the grubs from the backs of  
infested animals is recommended.

When the larvae are nearly ready  
to leave their host they may be easily  
squeezed out by pressing the swelling  
with the fingers, but if not so far de-  
veloped it is often very difficult to  
get them out by squeezing. In such  
cases a slender pair of forceps may  
be used for pulling them out. If the  
swelling and its opening are still very  
small the best way of extracting the  
grub is to make an incision with a



knife, after which the grub can be squeezed out by applying strong pressure. Kill the grub when removed.

Among the preventive measures recommended is to use a mixture composed in proportion of one pint of lard and one pint of turpentine, apply lightly on the back of the cattle at intervals during June, July and August.

### FEEDING HOGS.

Be sure to provide pasture and to feed what they will consume of the farm products that cannot otherwise be turned into money. Pigs make the best use of concentrates. These can be fed in a self-feeder and can be supplemented by various slaughterhouse, bakery or table by-products, etc. A by-product, to be economical, should be fairly concentrated, should be moderate in price per 100 pounds of nutrients, and should be fresh and free from taint. During the winter leguminous hays fed in addition to the concentrate help reduce the cost of production. In the summer pasture crops, such as rape, alfalfa, bur clover, crimson clover, rye, etc., make very economical and efficient supplements for hog feeding. In practically every farming district in the United States cheap and efficient forage and grain crops are available for hog production. These should be diligently studied by the farmer with the aid of the State and Federal forces, and used in the most profitable manner.

The self feeder is greatly reducing the labor cost in hog production, and the principles governing its use should become a part of every hog grower's equipment. It is especially useful in feeding, growing, fattening, stock, which is the largest part of hog production on most farms.

Hogs require continually mineral supplements to their feed. These have been furnished in some of the Southern States by allowing them free access to the following mixture:

|                           |          |
|---------------------------|----------|
| Charcoal .....            | 1 bushel |
| Hard wood ashes .....     | 1 bushel |
| Salt .....                | 8 pounds |
| Air-slaked Lime .....     | 8 pounds |
| Sulphur .....             | 4 pounds |
| Pulverized Copperas ..... | 2 pounds |

Mix thoroughly the lime, salt, and sulphur, and then mix with the charcoal and ashes. Dissolve the copperas in 2 parts of hot water and sprinkle over the whole mass, mixing it thoroughly. Keep some of this mixture in a box before the hogs at all times.

### Diseases and Parasites.

The prevention and cure of disease are always more readily accomplished where cleanliness and sunshine prevail. Probably the commonest and worst troubles of hogs are hog cholera, internal parasites, and lice. The farmer should make a thorough study of the methods of preventing and treating these troubles. This study should be made by consulting State and Federal authorities, who will gladly give information on the subject.

If the hogs are already wormy, turpentine can be given in the slop each morning for three mornings at the rate of one teaspoonful for each 80 pounds of live weight. Turpentine, however, is not very efficacious, and is liable to injure the kidneys.

Santonin, which was formerly widely used as a remedy for worms in hogs, is practically unobtainable at the present time, owing to foreign trade conditions. The following treat-

ment has been found to be very effective in experiments by the Department. Withhold all feed and water for 24 hours, then give each pig a tablespoonful of castor oil, to which has been added oil of American wormseed as follows:

Small pigs 2 to 3 months old, 35 drops.

Pigs weighing 50 to 100 pounds, 50 to 100 drops.

Larger pigs, 1 teaspoonful.

Each pig should be dosed separately if the best results are to be obtained. In case separate dosing is impracticable on account of lack of assistance or other circumstances, the pigs may be sorted out into lots of half a dozen each according to size. Thoroughly mix the castor oil and wormseed oil in proper quantities with a small quantity of milk or mash, and give it to the pigs, watching them carefully to see that none gets more than his share. Attempting to dose too many pigs at the same time in this manner will result unsatisfactorily, as some will get more and others less than they should. This treatment should be repeated in a week or ten days to secure 100 per cent efficiency.

Crude oil makes an excellent dip for hogs. It can be mixed half and half with water and sprinkled on with a sprinkling can. Kerosene oil emulsion is another excellent thing to rid the pigs of lice.

### ROG RAISING PROSPECTS.

#### Factors Considered in Coast Section.

Hogs in the Coast Section are raised under such varied conditions that it would be impossible to give a set of figures which would cover all cases. We can, however, give figures for cost of production under certain stated conditions, and then from these figures each individual farmer may make estimates as to his own cost of production. At the Agricultural College, Corvallis, Oregon, Professor Samson has for five years been experimenting with the cost of raising hogs under Willamette Valley conditions. Where grain is worth \$25 per ton and skim milk 25c per hundred pounds, he finds the cost of production to be approximately \$6.25. Where no skim milk is used, but tankage or similar protein concentrates is used in place of the skim milk, the cost is slightly higher, our figures being \$6.40. Where no tankage or other protein supplement is used, the cost runs up rapidly, usually 7c per pound or better, however, very few people are so out of date in their methods of hog production to try to raise them on grain alone.

During the year 1915 the average price of market hogs on the Portland market was \$7.42. This would mean, he concludes, that the average farm price in the Willamette Valley was around \$6.75, varying with the distance from Portland. The average farm cost of feed during the past year has been possibly a little higher than the \$25 a ton quoted, so that on the average we must say, allowing the full market value for all feed, the cost of producing hogs is at the present time just about the selling price. The man who undertakes to raise hogs without the use of skim milk or some other waste products, in other words, who expects to put into these hogs nothing but marketable feed, supplemented with pasture

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on good cultivated land, will find that present prices will not justify the continuing in the business. There are no indications that hogs can be profitably raised in the state of Oregon now or at any time in the near future entirely upon marketable products without the use of certain amount of feed which would otherwise be wasted.

If the average farmer can make a profit by turning his grain and pasture into hogs, what is to hinder all or approximately all of the grain and pasture in Oregon being used for hog production? There is being produced in the state of Oregon enough wheat and barley to raise about a million and a quarter hogs per annum, a number far in excess of what our markets demand. In the meantime we cannot assume that all of the grain could be used for hog production without creating a shortage of grain and thus bringing about a rise in prices. We therefore are forced to the conclusion that whenever the comparative prices of hogs and grain are such as to justify the turning of grain into hogs without the use of any waste or other products, one of two things must happen. Either the number of hogs will increase to a point of over-production and consequent reduction in price, or the price of grain will go up to such a point as to eliminate the profit. These are hard, cold, economic facts which cannot be avoided and anyone who starts in the business without fully recognizing these is bound to be disappointed.

The panic of 1907 had caused thousands of head of hogs to be thrown on the market, with the result that the following year showed a very great shortage. As soon as this shortage, however, was made up, prices must of necessity return to a more nearly normal basis, and a normal basis is exactly what we are on at the present time. We have been spoiled by several years of abnormally high prices, and too many

of us have built up a business on the assumption that those abnormally high prices will continue, which they cannot do. The time may come when prices are much lower than they are now, and on the contrary they may go at a point much higher than they are now, but one time or another the hog producers must not expect prices much different from what we are getting at the present time. This as previously stated, means that hogs are to be produced by the dairymen using skim milk in connection with their grain and pasture and by the grain producers, using the hogs to clean up their stubble fields. The man who expects to raise hogs without the use of skim milk, stubble or other waste will in the long run be doomed to disappointment, because as explained above, farmers can by the use of those waste products produce all the hogs that the local markets can possibly take care of and anything beyond that is bound to result in over-production, or a raising of the price of feed.

### CARE OF HOGS.

By Milan Still, Revere, Wash.

The hog is indifferent about being a "social success" and cares little about what he has "on his back." He is very sensitive, however, about his nose, mouth, limbs and under side. You must minister to his wants through these sensitive parts. If he is overheated, first let him smell or lie down in water. Never when heated pour it on his back till you have first wet his belly. So, too, in dealing with cold. Let your care be first what he has to lie upon rather than what is over him. He has one sentiment that the Indian chief Tecumseh shared with him. When Tecumseh was invited by General Harrison to a chair, he declined, saying, "The sun is my father and the earth is my mother, and I will repose on her bosom." The hog loves Mother Earth and prefers to



repose on her soft bosom rather than a chair, a board floor or, last and worst of all, a solid, hard cement bed. Clean earth, pure air and sunshine are the hog's disinfectants and best friends. Give him them in abundance and he "will walk through the valley of the shadow of germs and you need fear no evil." I would not use a permanent hog house to sleep hogs in if one was given me. I would use it for some other purpose and fence my hogs away from it. But you may not be so fortunately situated as I am here in Western Whitman county. A hog house may be a necessity to you. If so, select a small knoll that has drainage in every direction and build a not too costly house upon it. I say not too costly because it should be removed to another locality in a year or two where the surroundings are not foul with accumulated fecal matter. If you have not such a knoll, make one, and let your floor be Mother Earth. If you have a low, damp soil, cover your floor with four or five inches of sand, such as is used in bedding cars for shipment.

If you will be religious about changing the bedding you can use straw on your earth or sand, but remember that earth or sand is better than foul straw. You can even use boards on the sand, though I do not advise it in most localities, but if you do, lay them flat on the sand and arrange it so that they are temporary and can be easily taken up and dried and sunned at will. This precaution may save you much loss from disease. As to cement floors, I have no place for them whatever. They are cold and hard and you will likely find that your hogs of a cold night will prefer the backs of their companions to them, and pile to your sorrow.

Many hogs together will pile in cold weather on good beds of any kind, but less on earth than on floors. one thing more—never feed your hogs in the house where they sleep and give them a small runway in which to void their fecal matter.

### CARBON DEPOSITS.

#### How Made from Burners.

"If the amount of air entering the carburetor is not sufficient to insure complete combustion, we have what is known as a rich mixture," says a bulletin on carbon deposit and its causes, issued by the Standard Oil Company. "This is a slow-burning mixture rather than an explosive one and will cause excessive carbon deposit."

"For example, if the wick of an oil burning lamp is turned too high, too much oil will be siphoned through the wick for the amount of air entering the lamp to form complete combustion. The lamp will smoke, and soot, which is carbon, will be deposited on the chimney."

"This is exactly what happens in the cylinders of a gas engine. The products of incomplete combustion of the gasoline deposit a certain amount

of carbon in the combustion chamber. This carbon deposit will build up very much more quickly if it has a bed to build up on, such as would be produced by a lubricating oil which when exposed to the heat of explosion would leave a gummy deposit.

"Lieut. G. S. Bryan, U. S. N., has ably and correctly pointed out in his article on 'Motor Cylinder Lubrication' that lubricating oils manufactured from Paraffine Base crudes deposit more carbon than lubricating oils manufactured from Asphaltic Base Crudes. The reason for this is that Paraffine Base Crudes contain paraffine wax, which cannot be entirely eliminated from the manufactured product."

### STATEMENT OF OWNERSHIP, MANAGEMENT, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

State of Washington, County of Pierce. Before me, a notary public, personally appeared C. A. Tonnerson, who having been duly sworn according to law deposes and says that he is the publisher and owner of the Northwest Horticulturist and Dairyman, that it is not an incorporation and that there are no bond holders, mortgagees and other security holders owning or holding 1 per cent or more of the property.

(Signed) C. A. TONNERSON.

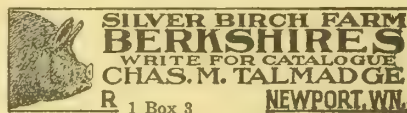
Sworn and subscribed before me this 31st day of March, 1916.

DANIEL MCGREGOR,

Notary Public in and for Pierce County, Washington.

### MEET OF NURSERYMEN.

The Pacific Coast Association of Nurserymen will hold its fourteenth annual meeting at Medford, Oregon, June 20-22, 1916. The program under



ROSES  
DAHLIAS  
CANNAS

Everything  
needed to beau-  
tify your Home  
grounds; direct

GLADIOLI  
GERANIUMS  
SUMMER-  
BULBS

from our Nursery to your door, post-paid, at lowest Farm prices; first class stock, true-to-name.

#### 25 VARIETIES OF SUMMER BEDDING PLANTS!

"PUGET-SOUND" climate and soil best adapted for the thrifty, healthy growth of ROSES, PLANTS and BULBS. We have your "Vegetable Plants."

#### THE PUDOR FARMS,

Puyallup, Wash., Dept. N.  
Rose, Plant and Flower Specialists.



Young Jersey cow Rosaira's Olga Maiden, for which Mr. Edwin Pettett, Dungeness, Wash., paid \$480 at the Pease sale. She has a famous butter fat record.

# Grow Artichokes

For  
Hog  
Food

Planted and cultivated as potatoes. Of great value for feeding stock. They are the best hog feed known. They are remarkable for their fattening properties, great productiveness, over 1000 bushels having been raised on 1 acre. Easier to grow than potatoes. They need not be dug. If hogs are turned in on them they can easily root the tubers out. On acre will keep from twenty to thirty hogs in fine condition for several months. Said to be a preventative of cholera and other hog diseases. Plant 400 lbs. per acre early in the spring.

WHITE FRENCH, most profitably variety. By freight or express, 10 lbs. 40c; 50 lbs. \$1.50; 100 lbs. \$2.50; 400 lbs. \$8.00. FOR TRIAL—By mail postpaid, 1 lb. 15c; 4 lbs. 40c; 10 lbs. 65c.

CATALOG OF FIELD AND GARDEN SEEDS No. 44 FREE

**Routledge Seed & Floral Co.** 169 Second Street. PORTLAND, OREGON

## EGGS EGGS EGGS

Ship your eggs to us also your cream and receive prompt cash returns.

### Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## HIDES LIVE STOCK WE SELL

We buy and always pay best prevailing market prices for hides, also for pelts, tallow and poultry.

Let us know when preparing to market your Live Stock.

New Process Beef Scraps, Bone Meal, Granulated Bone, Digestible Tankage for Hog feed and all kinds of Fertilizers.

Mutual Satisfaction is Our Plan.

### Carstens Packing Company

Please Mention This Paper

Tacoma, Wash.

### ST. MAWE'S JERSEY FARM

#### Poppy's St. Mawes

115434  
Has a Junior 2-year-old daughter that has made the Register of Merit in 6 months.

St. Mawes Lad  
130501

YOUNGSTERS  
FOR SALE

#### St. Mawes Beauty

295047  
10,239 lbs. milk, 690 lbs. 6 oz. butter as junior 2-year-old. Senior Champion Oregon State Fair. First 2-year-old Panama-Pacific.

Write for Price and further particulars

E. F. G. Carlyon, Box 621, Bellingham, Wn.

#### Rosaire's Olga Lad

87498  
His daughters all making R. M. as 2-year-olds. St. Mawes Poppy 21992  
Two gold medals, 12-934 lbs. milk, 942 lbs. butter. Second Gold Medal cow 1915. Last bull calf sold for \$700.

#### Rosaire's Olga Lad

87498  
Son of the Senior 4-year-old Champion of her day.

#### St. Mawes Susy

219991  
Two Gold Medals, 13-547 lbs. milk, 937 lbs. butter. Third Gold Medal cow 1915. Last bull calf sold for \$1200.

## Bigger Crops

are being grown every year by farmers who are improving their soils by using

## FERTILIME

Government experts agree that Western soils need lime to remove the acid sourness.

Ordinary lump lime is slow to act and 50% waste.

"Fertilime" saves this waste; brings the plant food from the soil; is easy to apply; and acts the first year.

For best results use "Fertilime" in the winter.

If your dealer cannot supply you, write our nearest office.

**F. T. Crowe & Company**



Seattle Tacoma  
Portland Spokane

GROUND LIMESTONE AT LOW RATES

## SEED CORN

Oregon Golden Glow Yellow Dent, early, large type, heavy yielder of fodder and well matured corn. Has matured in the Puget Sound country. Was awarded first and second prize for this district at First National Corn Show at St. Paul, Minn.; also many local prizes. We have a very choice lot of acclimated seed which we sell at the following prices as long as the supply lasts: Shelled and graded, 1 to 20 lbs., 7c per lb.; over 20 lbs., 6½c; choice selected ears, 1 to 20 lbs., 6c per lb.; over 20 lbs., 5½c. Satisfaction guaranteed.

**J. H. SAMUELSON & SONS,**  
Brownsville, Ore.

**FARM PROPERTIES**—Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. DANIEL MCGREGOR, Berlin Bldg. Tacoma, Wash. Established over 30 years.

**Dairy and Stock Ranch, 1200 Acres,** 300 acres bottom land, cultivated, 50 head stock, hogs, horses, implements, tractor, good buildings, running creek, write for full information, on Western Washington Stock Ranches.

**GEORGE M. ELLIOTT**  
205 Equitable Bldg., Tacoma, Wash.

Lazy folks ask for work with their lips, but their hearts pray that they to thyself? Subject thyself to reamay not find it.—Creole Proverb. son.—Seneca.



preparation by the executive committee pertains largely to matters of business for the betterment of the nursery industry in its relation to planters' and the development of aesthetic horticulture according to the higher ideals of value which the profession merits. The nurserymen are looking forward to an enjoyable time in this meeting to be held in the fruit district of Southern Oregon.

### SEED POTATOES.

Select from your seed potatoes tubers which show no external evidence of disease such as russet or Rhizoctonia scab, common scab or decays. Tubers having small pockets of storage dry rot may be used provided the decayed portion is cut out. No trace of the decay should remain. Tubers externally free from evidence of disease should then be cut into seed pieces. The first cut should be made across the stem end. The stem-end portion should always be discarded. If there is any deep discoloration at the stem-end, the entire tuber should be discarded, but if apparently healthy, the rest may be cut into seed pieces of the desired size. After cutting, the selected seed stock should be treated by soaking for 2 hours in a solution of corrosive sublimate. The formula for making the corrosive sublimate dip is as follows: To each 30 gallons of water add 4 ounces of corrosive sublimate which has first been dissolved in a little hot water. In making and using the solution, only wooden, glass or porcelain vessels should be employed. Corrosive sublimate is a deadly poison and both the solution and the potatoes treated should be kept out of reach of farm stock.

### BANKER-FARMER SUGGESTIONS.

Mr. B. F. Harris, who owns and operates a large farm in one of the central states and is also president of the oldest banking institution in his county, states from his own experience that the honest, conscientious and co-operative interest of the country banker does very great service to the cause of better agriculture.

"Of course," he says, "anybody is supposed to be able to run a farm, whether he can run anything else or not, but I believe it is becoming clearer every day that farming is a man's job—that it takes a bigger man to run a farm to its possibilities than to run the average place of business in the town.

"Many farmers are on the dead line—they need the counsel and aid of their banker to help them put their farm on a diversified basis—to make it a profit earner.

"It is really up to the country banker to make the advance—to help the honest, capable, industrious farmer get the results that are so near at hand and that should be cashed in for the welfare of the general community as well as for that of the particular individual.

"Every farm and farmer is not adapted to dairying in the usual or large sense of the word, but every farmer, properly located, should establish a small dairy herd as a side line, as it can be made a splendid additional source of profit in cash and added fertility.

Each farm must be more of a factory—selling less crops and more meat, milk, butter, eggs. A ton of

butter carries away but 6c from the farm fertility, while selling the feed required to produce the ton carries away \$374.67. There are \$161.22 worth of soil fertilizing elements in the feed we ship off the farm, which, if fed, would produce a ton of beef, and then only \$12.99 in fertility would leave the farm.

"The utilization of these facts has helped make prosperous the farmers and doubly fertile fields of Denmark, Germany, and other prosperous nations.

"The farmers of the United States are receiving more than five hundred millions of dollars annually in cash for the dairy products they sell from their farms, and in a way this is a side issue, like chicken and egg money—is almost money found.

"It has gotten to the point where it can and must be treated as a great and legitimate and necessary industry on every well conducted and located farm. More of us have got to come to live stock, diversified farming.

"Every township should have its farmer's club; every country town its commercial club; and these, with the country bankers in the vanguard, should be working to build up diversified farming and every phase of rural life—for farming is a life as well as a business, and must be made more likable, as well as more profitable.

"All these agencies should be working to bring in the best breeds of milking and beef stock, horses, hogs and sheep; to encourage the building of silos, creameries, the introduction of every modern tool and appliance; and ways should and can easily be found to finance these things."

### GOOD POTATO CROP.

On the Tieton Irrigation Project.

Mr. E. L. Sears, of Naches, Wash., came to the Tieton project from North Dakota, where he had been a long-time resident. He was among the first settlers who moved onto their land, putting out his orchard in the spring of 1910, when the first water was delivered on the project, says the Reclamation Record. Mr. Sears has 20 acres, 15 of which are in orchard and the remainder in diversified farm crops. Last season he planted 1½ acres of Netted Gem potatoes in four-year-old alfalfa ground and harvested 33 tons of choice potatoes.

In speaking of his success, Mr. Sears said:

"I have always selected my seed with great care, treating and testing for blight. By so doing I have potatoes this year entirely free from blight. I imported this year some Golden Russets from Duluth, Minn., and found that they did fully as well as the Gems. It is my opinion that if the farmers would only plant their very best medium-sized potatoes, in place of selling them for a good price and always keeping their little potatoes to plant year after year, they would profit most materially, both as to quality and quantity of their produce.

Mr. Sears seems to have profited by his own care in seed selection and the attention given the potatoes before and after planting. It is the opinion of a number of those who have been over the Yakima potato fields last season that the average yield per acre for the plantings in the valley is less than 6 tons. This

yield Mr. Sears has nearly quadrupled.

### WESTERN SHIPMENT OF PINE AND BUSH FRUIT PROHIBITED.

Eastern Nursery Stock a Menace to Western White Pine Forests.

The United States Department of Agriculture, through the Federal Horticultural Board, has sent to all eastern nurserymen an urgent request not to ship white pines, currants and gooseberries west of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas. This action has been taken in order to protect the white pine forests of the West from the white pine blister rust without, if possible, the imposition of a burdensome plant quarantine. At a conservative estimate, the value of the government and private holdings in these forests is \$240,000,000. They would be in serious danger if the white pine blister rust, which has now gained a foothold in six eastern states and is suspected in the Ohio Valley, should spread to the Rocky Mountains. Gooseberries and currants are included in the Department's request because they can carry the disease as well as the white pine itself.

Warning to Western States.

At the same time, the Department has issued a warning to the States within the range of the western white pines, of the danger of allowing nursery stock of these three

kinds, from eastern nurseries, to enter their territory. Inspectors of all western States have been asked to notify the Federal Horticultural Board of any shipments from points east of the states named. The reason for this action is that the white pine blister rust, a very destructive disease to all white pines, occurs also in a different form, as a leaf disease on currants and gooseberries. These two plants, therefore, may carry the disease to new regions and infect local white pine. Like citrus canker and chestnut blight, the white pine blister rust was brought to this country on imported nursery stock, before the passage of the Federal Plant Quarantine Act.

The Department, in its letter to nurserymen, points out that if no shipments of these three plants are made from infected or suspected territory into the West, further action may be unnecessary. If, however, nurserymen ignore this request it is practically certain that at an early date a Federal quarantine, which will prohibit the interstate movement of the plants from the infected states, will have to be established.

### MARKET NEWS SERVICE BEGINS.

Field men of the office of Markets and Rural Organizations have left Washington to inaugurate the Department of Agriculture's Market News Service for perishable crops this year. Branch offices have been

## SUDAN GRASS SEED

Write for price, stating quantity wanted.

It takes from 10 to 12 pounds to plant an acre.

BUTZER SEED STORE

188 and 190 Front Street,

Portland, Oregon.

### "1½ Carloads Johnston Machinery and Not One Call for Repairs!"

No repairs within two seasons is a record from Johnston Harvesting Machines sold by the Tacoma Implement Company. "The Johnston line has proven itself to be one of the most desirable and light draft machines we have ever handled", says their letter.

"Used the Johnston for cutting oats and vetch hay, also in harvesting sorghum and there is no mower made that will do better work any place you put it." F. & F. Livestock Co., Crewell, Or.

"I have used mowers for thirty years. In this time I have used 8 different kinds of machines. I find the Johnston Mower I bought of you last July far superior in every way to any other make of machine I have ever used." F. R. Delzell, Turner, Oregon.

### Johnston Mowers and Rakes

backed by a half century of Johnston reliability and 51 years of Wade experience in choosing the right implements for Northwest conditions.

Write us for free Johnston catalog and name of nearest dealer. A postal will do.

**RMWADE & CO.**  
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PORTLAND, ORE.  
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Oldest and Largest Independent Wholesalers of Farm Machinery in Pacific Northwest.

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Dealers Everywhere

No. 12 Johnson Mower, 4½ or 5-foot.



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established in New York, Boston, Philadelphia, Buffalo, Pittsburg, Chicago, St. Louis, Minneapolis and Kansas City, to collect and distribute information in regard to marketing conditions.

#### POISON POCKET GOPHERS.

Professor W. T. Shaw, of the Washington Agricultural Experiment Station at Pullman, Washington, states that we know now that much of the pocket gopher food is stored in caches near the surface, in little side pockets off the runways. Therefore, it is possible to poison him, especially in early spring, by dropping poison bait down into his runway where he is accustomed to find his food. The direction of the runway is indicated by the way in which the mound has been made in throwing out the earth from the burrow. About a foot back of the mound prod around in the earth with a sharp peg about the size of a fork handle. When the burrow is struck, drop three poisoned cubes down into it and cover with a little dead grass to keep out most of the light.

The poison cubes are made in the following way: Cut sweet potatoes into cubes of half an inch; wash and drain well. While the sides of the cubes are still moist, sprinkle four quarts of them with this mixture:

Strychnine (alkaloid, powdered) 1 ounce.

Saccharine (sugar)  $\frac{1}{2}$  ounce.

The strychnine and saccharine are mixed dry.

This is the formula recommended by the Biological Survey of the United States Department of Agriculture.

In case sweet potatoes can not be secured, carrots or parsnips may be used.

It is very important that the work of extermination should be done early in the season, when the ground is most free from vegetation.

#### BOOK FOR FARMERS.

A new note is sounded in the book, "Marketing and Farm Credits," for 1915, just off the press. The book contains the addresses given at the third annual sessions of the National Conference on Marketing and Farm Credits in joint program with the National Council of Farmer's Co-operative Associations. It contains 544 pages, is printed on good paper in clear type and is brimful of interesting facts about the two great business problems that farmers must solve for themselves, that every person on a farm or interested in farming should know. The price of the book is \$1 (postage 15 cents extra).

For \$1.25 we will send a copy of the book, together with credit for a year's subscription to this paper, either new or renewal.—NORTHWEST HORTICULTURIST AND DAIRYMAN, Box 1604, Tacoma, Wash.

#### WHITE GRUB CONTROL.

The white grubs that were so destructive during the summer of 1915 will have wintered in the ground and may be expected to come nearer the surface as large grubs in April and May. These large grubs will feed to some extent on the roots of plants and may be expected to do some early damage to this year's crop, but fortunately by the middle of June they will become dormant, change to pupae early in July, and

by the first of September become beetles which remain underground until the spring of 1917.

As the mature white grubs and the pupae are tender and more easily killed by a disturbance of the soil than are the beetles, the entomologists of the U. S. Department of Agriculture advise the farmer to plow up his land as soon after July 15, 1916, as practicable. The beetles if allowed to winter in the earth will emerge as May beetles in May, 1917, lay their eggs and thus start another destructive brood of white grubs that if not destroyed may do as much damage in 1918 as grubs did to crops during 1915.

#### Immediate Measures for 1916.

To lessen the damage during 1916 from the brief spring feeding of these large grubs, the following measures are important:

(a) If the ground is to be plowed or cultivated in the spring, delay plowing as late as possible, or until the grubs have returned to near the surface (about last of April) and have chickens follow the plow to destroy the grubs that are turned up.

(b) Delay planting until the 15th or 20th of May or a little later if practicable. The object of this is to have the roots of the young plants develop so late that this year's large grubs will not have much chance to do damage before they become dormant early in June.

(c) Where possible, on land that is infested, avoid planting corn, timothy, strawberries or early potatoes.

#### STICK TO YOUR TOIL.

Here is Abraham Lincoln's advice about moving too frequently to get away from toil which might apply to some people on the Pacific Coast.

I learned that you are anxious to sell the land where you live and move to Missouri. I cannot but think such a notion is utterly foolish. What can you do in Missouri better than here? Is the land any richer? Can you there, any more than here, raise corn and wheat and oats without work? If you intend to go to work, there is no better place than right where you are; if you do not intend to go to work, you cannot get along anywhere. Squirming and crawling from place to place can do no good. You have raised no crop this year, and what you really want is to sell the land, get the money and spend it. Part with the land you have, and, my life upon it, you will never after own a spot big enough to bury you in.

"Remember that when you are in the right you can afford to keep your temper, and that when you are wrong you can't afford to lose it."

#### HOME COURSES IN AGRICULTURE.

To assist teachers in developing home projects in agriculture, the States Relations Service of the Department of Agriculture has recently issued Professional Paper No. 346, "Home Projects in Secondary Courses in Agriculture." This is followed by a discussion of the essentials of a home project in which are included directions for keeping records, blanks and forms, and typical outlines for projects on potatoes, pigs, alfalfa, orchards, poultry and the farm home. These home projects are classified as production, demonstration, improvement, and management projects,



Save one-half

## MICA AXLE GREASE

MICA AXLE GREASE lasts twice as long as ordinary axle grease. Contains powdered mica—a mineral lubricant that is practically wear and heat-proof. It gives a cool, slippery coating that clings to the spindle, makes easier pulling, and out-lasts plain grease two to one. Saves harness, saves horses, saves money. Get a can from your dealer today.

Standard Oil Company  
(California)



#### CEDAR BEE HIVES

More durable and lighter than pine; will last longer, exposed to weather with or without paint, than any other hive made. Bees work as well in cedar as any other wood. Cedar does not swell or shrink. The quality of our workmanship and accuracy of our milling pleases our customers.

Prices are lower than for pine hives. Write today for our bee hive booklet.

We manufacture all kinds of fruit boxes and baskets.

BREW MFG. CO.  
Puyallup, Wash.

**Pull those Stumps Alone** 30 Days Trial  
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You can do it with our new **Double Leverage 6 Speed KIRSTIN**. Move and operate it alone. Outpulls 100 horses. Absolute satisfaction guaranteed or your money back. 7 models to choose from.

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#### THE DUCREST PAT. STEEL STUMP PULLER & TOOLS MFG.

\$27.50 buys the strongest, handiest, quickest, most substantial and the safest One Man Hand Power Steel Stump Puller Outfit Complete. This is the most inexpensive stump puller handled by one man alone; will uproot more stumps in one day than a gang of 15 men in same time. The wages for the 15 men one day more than pays the price of this complete outfit landed right at your place. Or the price of four boxes of powder more than pays for this powerful outfit, which is absolutely unbreakable, unweareable, and we guarantee it to pull 96,000 pounds with ease or money refunded at once.

WE HAVE the world's greatest stump pulling demonstration daily a few minutes' walk from our place, and we have there six different sizes of our Ducest Steel Stump Pullers with the enormous pulling capacity from 96,000 pounds to over 1,000,000 pounds according to the size of each stump puller outfit. WE SINCERELY invite you to come and see with your own eyes the greatest stump pulling exhibition which is done in the most economical way. (NO BLASTING.)

WITH EACH DUCREST Stump Puller we give absolutely free of charge a new, most economical stump burning process, which burns each uprooted stump singly. (NO PILING REQUIRED.) OUR DUCREST Stump Puller and our new stump burning process will reduce  $\frac{1}{4}$  of your land clearing expense and labor. (WE ALSO UNDERTAKE LAND CLEARING.)

Write for particulars or call on us and see our big stump pulling demonstration before you buy a stump puller. Take Beacon Street car and ask the conductor to let you off at 947 12th Ave. South.

The Ducest Pat. Steel Stump Puller & Tools Mfg.

947 12th Ave. S., Seattle, Wash.

## Strawberries

Americus Everbearing strawberry plants. Delicious fruit from August up to freezing weather. One of the finest flavored and firmest berries known, \$1.50 per 100

F. I. Moffet Ellensburg, Wash.



## BEE HIVES AND SUPPLIES

IF YOU own an orchard or keep bees you should have a copy of our

#### 1916 CATALOG

of Bee Supplies listing everything necessary to successful handling of bees and producing honey,

Gives Valuable Information on Pollination. Tells How to keep and care for Bees. Ask for Catalog No. 53

## PORTLAND SEED COMPANY

PORTLAND OREGON





the last dealing with the business side of the farm. This bulletin can be obtained free on application to the Editor and Chief, Division of Publications, U. S. Department of Agriculture, Washington, D. C., as long as the Department's supply for free distribution lasts.

### MORE INCOME AND LESS EXPENSE.

#### Nonpartisan League Primarily a Business Organization.

The moving ideas leading to the organization of the Washington Nonpartisan League were to increase incomes and to lower living expenses.

To accomplish these objects the League will need to take some part in political activities; but that will be merely incidental.

Two needless burdens on the backs of the producing millions are:

(1st.) **Plain Grafters**—Men who do nothing at all; idlers; parasites, political henchmen who are paid in "pork" from the public treasury; franchise grabbers; speculators; men who are given special privileges—private monopolies. To abolish graft we must control political action.

(2nd.) **Waste**—Here the needless burden is created, not by idlers, but by men who, although busy, accomplish no useful end. Several cities have accomplished a saving of 4 cents a quart (16 cents a gallon) on milk, by simply having a central receiving station to which all farmers bring their milk to be weighed and tested; then the city, WITH A SINGLE DELIVERY SYSTEM, distributes the milk to the consumers. By this plan the consumer gets a better grade of milk; the farmer gets two cents a quart MORE, while at the same time the consumer pays 2 cents a quart LESS.

For many years I raised peas on contract, getting 3½¢ to 3¾¢ per lb. while the consumer paid 20¢ to 25¢ per pound! That seems like a large margin.

Grain is twice as high in the Puget Sound area as in Iowa or Nebraska; yet we farmers get only two-thirds as much per pound for our pork. Pork products are shipped in every day, year in, year out, yet we get, on an average, about 5½¢ per pound; while the Iowa farmer gets over 7¢, with a state packing plant to take care of what hogs are not needed for the block; farmers should get 2¢ per pound (\$3 a head) more for their hogs, while at the same time the consumer would get his pork products cheaper.

Public markets are a short step in the right direction; but we must go enough farther to eliminate all waste.

#### State Commission House.

Several farmers have told me that even when they went to Seattle and sold carloads of potatoes direct to merchants, the merchants deducted \$3 per ton, which the merchant claimed the commission men would collect (or else would refuse to supply the merchant with fruits and other necessary articles). Whether the merchants lied, slandering the commission men, or whether the commission men levied blackmail on the merchants is wholly immaterial. The farmers were out \$3 per ton with no benefit to the consumer.

A state commission house, with branches in every important city, would be a very effective method

of saving needless expense between producers and consumers. Grain, hay, flour, potatoes, meat and other necessities should pass as cheaply as possible from producer to consumer.

On the other hand, machinery costs farmers twice to three times what it should. There is no reason whatever for a simple machine like a mower costing \$50.00.

Not many years ago each fruit grower shipped his own produce. Then we had small associations.

These became larger.

It is now time to have a STATE DEPARTMENT OF MARKETS.

Of course no one would be compelled to use the public system; but most producers would be glad to do so.

Today the Puyallup-Sumner Fruit Growers will send, say, a car of raspberries to Fargo. The same day the Whatcom Fruit Growers will also ship a car of raspberries to Fargo. The market is glutted; prices go to pieces—and then for a couple of weeks the people of Fargo get no berries at all.

California has a Department of Markets; which stands ready to route ALL SHIPMENTS FROM THE ENTIRE STATE; thus avoiding both gluts and famines in eastern markets.

The Australian Department of Markets handles all exports of meats and butter.

A state packinghouse (by taking care of the surplus hogs over the demand for block hogs) would raise the price of hogs easily \$3 per head; while at the same time it would break up the meat monopoly and so lower the price to consumers; precisely as the price of milk is RAISED to producing farmers and at the same time LOWERED to consuming townspeople by having a single city delivery.

Fifty dollars per family is a very conservative estimate of the savings to an average family by a more modern and sensible system of marketing.

#### Abolish Graft.

Another main object of the Washington Nonpartisan League is to abolish graft.

Let us define "graft" as legalized, but unjust, appropriation of values.

If I steal your horse, that is illegal.

But if I sell gravel at 15¢ per yard to the County Commissioners (they to get 5¢ per yard rake-off) thus getting \$3,000 for an acre of worthless land—that is "graft."

Graft is unearned income.

When a public service corporation is allowed \$39,000,000 for rate making purposes, while it is put on the Assessor's books at \$6,000,000—that is graft, legal but immoral.

Delinquent taxes draw interest at the rate of FIFTEEN PER CENT PER ANNUM; but so far as I know all the State and County money is loaned at 5 per cent to 6 per cent—LEAVING PRIVATE GRAFTERS, IN COLLUSION WITH COUNTY TREASURERS, TO RAKE OFF THE WHOLE OF THIS FIFTEEN PER CENT—that is a nice graft.

Vast areas of timberland in the state are still unsurveyed—and so pay no taxes whatever, and the Timber Barons seem to have enough influence to prevent the survey of these lands.

In Seattle only one lot in seven is in use. In the entire Puget Sound area not more than one acre in ten of the agricultural land is in use.

Why shouldn't the Standard Oil Company make the best oil—with over 40 years experience in refining—with unequalled plant equipment? And Zerolene is scientifically refined from selected California crude—asphalt-base. Prominent authorities have recently declared that an oil correctly refined from asphalt-base crude can be made not only equal but superior to paraffine-base oils. Next time you empty the crankcase refill with Zerolene. Dealers everywhere and at service stations and agencies of the Standard Oil Company.

**ZEROLENE**  
the Standard Oil for Motor Cars

### THE "BOSS" TREE PROTECTOR

Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frosts, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.



#### PRICES

|                         | Per 1000 |
|-------------------------|----------|
| 10 in. long, 7 in. wide | \$10.00  |
| 12 in. long, 7 in. wide | 11.00    |
| 14 in. long, 7 in. wide | 12.00    |
| 16 in. long, 7 in. wide | 13.50    |
| 18 in. long, 7 in. wide | 15.00    |
| 24 in. long, 7 in. wide | 18.00    |
| 30 in. long, 7 in. wide | 21.00    |

YUCCA MANUFACTURING CO.

1380 Willow St., Los Angeles, Cal.

### Twenty-five Per Cent Reduction

On all apple, pear, peach, prune, plum, cherry, apricot, nut, shade and ornamental trees, berry bearing plants, flowering shrubs, vines, hedge plants, roses, etc.

We need more room in our nurseries for spring planting.

All stock clean, healthy and thrifty. Grown on virgin soil two years from sage brush.

Most complete stock in the Northwest from which to select.

ALL STOCK TRUE TO NAME

Send today for special price list and descriptive catalog.

O. & F. NURSERY CO.  
BOX 217B, WAPATO, WASH.

**THE ROOF IS SELF-ADJUSTING**

As a part of our steel anchorage system, our silo has metal fittings that allow the roof to adjust itself as expansion and contraction occurs.

**THE Weyerhaeuser SILO**

This is only one of several absolutely necessary features due to the fact that moisture and heat alternately expand and contract all silos.

Write for illustrated booklet explaining everything. Reserve a silo now and save money. List of agents in your county or booklet upon request.

**WEYERHAEUSER LUMBER CO.**  
Everett, Wash.

### "Carco" KILLS MAGGOTS

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers, who are highly pleased with results.

#### SOME OF OUR PRODUCTS

Fish Oil Soap Lice and Mite Liquid  
Fly Chaser Carbolineum  
Creosote Crude Carbolic  
Disinfectants Wood Preserving  
Materials

For Sale By All Leading Seed Houses  
On Pacific Coast. Ask For It.

Manufactured ONLY by  
**Standard Chemical Company**  
TACOMA, WASH.  
(Send for Circular)



#### THE AIR-O-LITE

Gasoline Lantern, 300 candle power costs ½¢ per hour to run, used by poultrymen farmers and for all outside purposes.

We handle repairs and supplies for Gasoline Lamps, mantels and chimneys for Aladdin Kerosene Lamps. Can be sent by parcel post. Write for prices

**Ben Olson Company**  
1330 Commerce St.  
Tacoma, Wash.



Speculators are every year appropriating MILLIONS UPON MILLIONS OF DOLLARS CREATED BY FARMERS AND WAGE WORKERS—this is a colossal graft.

In British Columbia improvements the WHOLLY exempted from taxation. On all lands there is a tax of five mills on the dollar; and in addition to this uniform tax of five mills SPECULATORS PAY A SPECIAL TAX OF 35 MILLS ON THE DOLLAR. Thus the speculators pay EIGHT TIMES AS MUCH on their wild land as a farmer does on a similar piece of land highly improved.

Is it any wonder that Washington is receiving few immigrants?

The membership fee for the Washington Nonpartisan league is \$4 for the state wide campaign; and from \$2 to \$5 for the county organization, as each county decides for itself. The \$4 fee pays for the state paper; 10c goes to the state organizers' office; and the rest will be spent in carrying on the state campaign; hall rent; literature; speakers, etc.

In North Dakota the fee is \$9 and there are over 40,000 members. As Washington has twice the population of North Dakota, we need 80,000 members to be in equally good shape.

In North Dakota the three main issues are: (1) State Elevators; (2) State Flouring Mills and (3) State Packing Houses.

As soon as we have enrolled a few thousand members, enough to be fairly representative, we will select two or three fundamental reforms and elect a legislature that will enact the necessary laws.

Beyond doubt State Marketing and Tax Reform will receive early attention.

The first will save an average family more than \$50 a year.

The second will save the average farmer more than \$1 per acre in taxes. The Washington Nonpartisan league is primarily a business organization.

We will go into "politics" just enough to clean out the Pirate's Roost known as "The Machine."

There is not a man in the state who cannot well afford to borrow the \$6 at 10 per cent. interest and join the league. It will bring him bigger financial returns than any other investment he ever made; for ultimately the Nonpartisan league will, by destroying speculation, in land, guarantee to every man and to every woman a steady "job" where the wages will be equal to the full product of his or her labors. I will be glad to address Granges, Trades Unions or other gatherings at any time.

W. H. KAUFMAN,  
Bellingham, Wash.

#### LAND CLEARING.

A booklet called "Better Stump Removing," dealing with the problem of and most practicable methods of getting rid of the stumps on the North Pacific Coast has recently been published by the Giant Powder Company, of San Francisco, who are the oldest makers of high explosives in America. This treatise tells about high explosives, their selection and use; how to get the best results in blasting out stumps, describing different methods without as well as in connection with blasting.

Charpitting and other methods of burning stumps out without first removing them from the ground have

the advantage of requiring little cash outlay. Their disadvantages are that in practice they do not remove the roots much below the surface of the soil, as a rule, and they require weeks and months of care and attention. Charpitting succeeds only in certain soils. In many soils stumps cannot be burned at all. If anything goes wrong during the weeks the fires are burning, the attempt is a failure. If the land owner's time is worth fair wages, he would make more money by working elsewhere for the wages, and then using the money to remove the stumps by superior methods. Employers will find that their payroll will reach alarming figures for the time it takes to remove stumps by burning. But a feature yet worse is the destruction of much valuable humus in connection with the charpitting method.

In the actual removal of stumps from the ground, blasting costs more than pulling or than burning by the charpit method in favorable soil. But in the end, counting the cost of the actual removal of the stumps, or their burning or other disposal, of the filling of stump holes and leveling the ground, as well as the value of the time consumed in the operations, the blasting method is undoubtedly the cheapest.

Yet it is the ease and convenience of blasting, and its effectiveness, more than its low cost, that make it desirable. There is no need to buy expensive machinery, but in connection with hand or gasoline stump pullers the blasting facilitates the work.

Much of the stump blasting that has been done in the West has been done wastefully. The blasters have ignored what are apparently insignificant details. But it is these little things which make the difference between profitable and unprofitable clearing, and which run up the cost. Land can be cleared by proper methods with ease, speed and at low cost. The book explains how. It is sent free on request. Any reader of Northwest Horticulturist, Tacoma, Washington, may get a copy by writing for it and mentioning this publication.

#### THE SILO.

Doubtless more people are now considering the advisability of building a silo than ever before. The combination of a severe winter and high priced hay should naturally cause the dairymen to think along this line. In the case of many dairymen during the past winter, a silo full of oats and vetch or any of our good silage crops would have paid for itself in the saving of hay it would have effected. It is true last winter was an exception, yet with normal hay prices and weather conditions it is a conservative assertion that with twenty head of stock to feed, a silo will pay for itself in two years.

Relatively few question the value of a silo. With most of those without this modern necessity it is more a question of financing the deal. The two most common objections to the purchase of a silo are the original cost and the cost of filling. In fact, if an easy way of financing the deal could be had, double the number of silos would be found in the country that we have here today. In some of the middle western states a few



## Good Bye! Mr Gopher

—and it's so easy! No bothersome traps—no uncertainty. Simply locate the tunnel, place in it a waste ball saturated with Kilmol. In 3 minutes ignite and cover up the opening with dirt. The deadly gases quickly reach every part of the burrow and it's good-bye, Mr. Gopher!

**KILMOL**  
**SQUIRLGOPHENE**

Will Kill 'Em All

Kilmol both asphyxiates and poisons—fresh air can't revive Mr. Gopher. The gas is heavier than air and so remains in the burrow for hours. Results guaranteed or money refunded. Used by Government, State and County officials with U. S. Destructor.

The waste balls we sell are better and cheaper than home-made. Ask us about new Government formula of poisoned barley. Write for interesting information on the eradication of squirrels, gophers, etc.

OREGON DISTRIBUTOR  
**Portland Seed Company**  
Dept. N Portland

WASHINGTON DISTRIBUTOR  
**James & Hanes**  
Dept. N Spokane



U. S. Destructor,  
invented by  
U. S. officials.  
Forces gases in-  
to burrow.

## Anthony Fence

Under stress of action each wire within a considerable radius is brought into play, affording, to an extraordinary degree, the resistance of a flexible wall of steel—due to the perfectly balanced woven fabric, in which each wire is drawn under equal tension with machinery of special design. Thoroughly galvanized.



### American Steel Fence Posts

Cheaper than wood and more durable. Last a lifetime. Sent Free—write for booklet on how to set posts and erect fence. Every farmer should have it.

DEALERS EVERYWHERE

**AMERICAN STEEL & WIRE COMPANY**

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160 ACRE  
FARMS IN  
WESTERN  
CANADA  
FREE

## Wanted 50,000 Farm Hands

of experience at once on the farms of  
**Western Canada**

To replace the young farmers who had enlisted for the war. Good wages and full season's work assured.

**There is no danger or possibility of Conscription in Canada**

References required from all applicants. For special railroad rates and other information apply to J. N. GRIEVE  
Cor., 1st & Post Sts. Spokane Wash  
AUTHORIZED CANADIAN GOVERNMENT AGENT

#### POWER SAW BARGAINS

Portable wood saw with 6 h.p. Waterloo Boy gasoline engine, or a King of the Woods Drag saw, 4 h.p., capable of 40 ricks per day, \$100 down and balance \$185 long time on either. Both are new. The factory price is \$350. Address

**AGRICULTURAL ENGINEERING CO.**  
Seattle, Wash.

The Walnut Book is a new, neatly printed publication in booklet form, published at Orenco, Oregon, at \$1 per year. It is devoted to the promotion of the walnut industry, both cultivation and marketing. We will send it to any new or old subscriber, together with one year's subscription credit for the Northwest Horticulturist and Dairyman on receipt of \$1. Address Box 1604, Tacoma, Wash.



progressive bankers have made an inducement to farmers wishing to build silos by making them loans for the purchase with no interest for one year and in some cases with just enough interest to pay the cost of doing the business. Thus the improvement would pay the interest and part of the principal before any of the interest was due. The investment must be a good one from the farmer's standpoint or the banker could not afford to encourage it. He figures that the farmer, by the investment, will make enough to pay the interest and the principal in a reasonable time. The bankers in this case are working not entirely from an unselfish motive. They can see that the farmer by such an investment will make more money that will eventually be deposited with their banks.

#### Problem of Filling the Silo.

In the writer's opinion, filling can be most economically accomplished when not to exceed three farmers own the filling machinery in common. The big machine necessitates a large crew and any stop where a large crew is involved costs money, furthermore a silo will hold more if filled in three days than if only a day and a half was employed in that operation, because of more time to settle. With three men owning the filling machinery there is a much better chance that the silage will be put up at the proper time than it can or a dozen must use the same machine and take their turn. Three men with their own labor and that regularly hired on the farm should be sufficient to operate the smaller capacity machine without the necessity of hiring extra labor.

The following are a few reasons favoring the use of a silo. The two last apply only when corn is used and, by the way, the writer has seen as good corn silage produced in Grays Harbor County, Washington, as ever came from a silo in the so-called corn belt.

1. The silo increases the live-stock capacity of the farm.
2. It preserves the entire crop with a minimum loss of food value.
3. Silage supplements the summer pasture when it grows short in August and September.
4. A silo makes it possible to save the hay crop when the weather does not permit curing.
5. The crop from a given area can be stored in a smaller space when in the form of silage.
6. Silage saves the feeding of expensive hay. A cow fed on silage seldom eats over 10 lbs. of hay per day and many herds are fed silage and no hay.
7. Silage is similar to grass in feeding value, therefore, winter feeding with silage more nearly approaches June conditions.

## The Farm Tractor

By C. J. Zintheo, Agricultural Engineer, Seattle, Wash.

About twenty years ago the threshing manufacturers converted their portable steam engine into a traction engine capable of pulling the threshing separator about in the field.

A little later the plow manufacturers were persuaded to build a plow that could be hitched behind the steam tractor and plow the land.

8. Corn is more easily handled in the form of silage than as stover and grain.

9. The silo prevents waste of stalks, leaves and husks, which contain two-fifths the value of the corn plant.

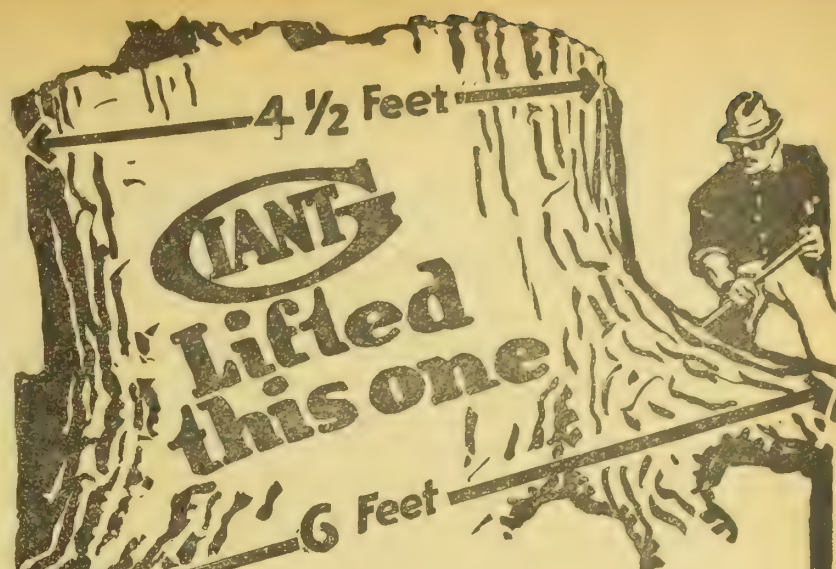
Anyone contemplating the erection of a silo this year should plan his crops accordingly. The undersigned has had experience both as a silo salesman and in the erection of silos and will gladly give any assistance possible in the planting of crops or the erection of the silo.—C. F. MONROE, County Agriculturist, Montesano, Washington.

#### LIME NECESSARY FOR CLOVER.

Clover Demands Lime and Phosphates

It is not always easy to tell when a soil has enough lime. There are several methods for testing the "lime-requirement" of soils; but for practical purposes, this may be roughly determined by the kind of plants growing on the land. If trouble has been experienced with red clover but if a fair growth of timothy and of alsike clover can be gotten, the land probably needs some lime, say 1,000 pounds of ground limestone per acre; if timothy and alsike clover are crowded out by redtop or if such weeds as sorrel are abundant the land needs plenty of lime, at least a ton of ground limestone to the acre, and probably more. While the functions of lime both in the soil and in the plant are not thoroughly understood, we can confidently say that the clover is healthier when there is plenty of lime than when the soil is sour, and being healthier the young plants will withstand a dry spell better, and the old plants will come through the winter better than plants growing on sour soil. To sow red clover seed on so-called acid soils is usually to waste time and money.

The addition of phosphate has also been found to be very beneficial, but here again there is no way to tell how much is needed without trying. If clover has not done well on a farm, the need of lime or phosphorus or perhaps both is indicated and the farmer would do well to buy a bag or two of ground bone or of superphosphate and a ton of fine ground limestone and apply separately or in combination to a part of the field. The growth of the clover during the following season will tell the story of the needs of his soil. The bone meal and phosphate may be applied at the rate of 200 or 300 pounds per acre. Of course if there is time and opportunity it will be well worth while to try different rates of application so as to find what rate will give best returns at smallest expense.



—Six feet through at base, 4 feet 6 inches through at top, five feet above ground.

Giant Stumping Powder did a clean job, taking out roots and all without tearing a big hole in the ground. Farmers who have used them know that

### GIANT FARM POWDERS

STUMPING — AGRICULTURAL

always save them money, time and work. They save money because they lift and heave as well as shatter, and go further than high explosives that merely split the stumps. They save time and work because they get out the stumps—big or little, green or dead, in a condition easy to handle. "I get better results from Giant Powders than from any other powder I have used," says A. E. Adkins, Woodburn, Ore.

There are two Giant Farm Powders, both made especially for Pacific Coast farmers. Eureka Stumping Powder is most economical for dry work and Giant Stumping Powder saves money in stump blasting in wet soil. Try these two. Compare them with the powder you have been using, and you will always use Giant in future. Write us and we will have our nearest distributor supply a trial case at the lowest market price.

#### Mail the Coupon for Free Books

Better ways of removing stumps and boulders, making ditches, planting trees, and breaking up the subsoil are described in our five illustrated books. They were written for western farmers, to meet the conditions that you have. Choose the books that you prefer and mark and mail the coupon today—before you forget it.

THE GIANT POWDER CO., Con.  
Home Office: San Francisco

"Everything for Blasting"

Branch Offices: Seattle, Spokane, Portland,  
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#### Free Book Coupon

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206 Kohl Bldg., San Francisco  
Send me your illustrated books on the subjects which I have marked X.

- ☐ Stump Blasting
- ☐ Boulder Blasting
- ☐ Subsoil Blasting
- ☐ Tree Planting
- ☐ Ditch Blasting

Name .....

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Write below your dealer's name

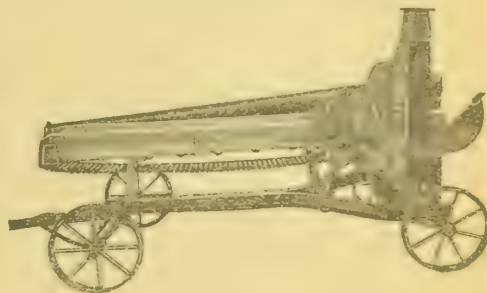
## Filling the Silo

and cutting the ensilage in ONE operation—with a smaller gasoline engine, or higher with the same power, than any other machine—that's the record made by the

### PAPEC PNEUMATIC ENSILAGE CUTTER

Fill your silo whenever your ensilage is ready to go in. Don't wait for your neighbor's. The investment is small and the expense saved pays big dividends. Write for descriptive Catalog.

WE ALSO  
SELL ALL  
KINDS OF  
DAIRY MA-  
CHINERY,  
BARN EQUIP-  
MENT AND  
SUPPLIES.  
ASK FOR  
CATALOG.



## Dairy Machinery Co.

907 WESTERN AVENUE

Seattle, Wash.



As the gasoline engine developed and became perfected, this form of power was substituted for steam. The first gas tractors were constructed with a single cylinder of large bore, stroke and horse power. It was really the large stationary gas engine mounted on wheels and self-propelling arrangements provided.

As the plows for large steam tractors were the only ones available the gas tractor was built to fit them, and as a result the gas tractors were very large in size and very heavy. Both of these tractors were only suitable for the large bonanza, grain farmers of the middle west, whose fields were large, land level and ground firm. On such farms where all conditions were favorable the big gas tractor did very well, but it never became very popular with the average farmer, and its price excluded it entirely from the smaller farms.

During the last three years an evolution has been in progress in the development of farm tractors that bids fair to be as much of a revolution as the small automobile.

Numerous manufacturers started to make small farm tractors suitable for one, two or three plow bottoms that were cheap enough in price so that the average farmer could afford to buy them.

Most of these tractors are equipped with more than one cylinder, high tension magnetos and cranking device like an automobile. There are various types of these tractors, a good many of which cling to the old lines of the big tractors, while others have made radical departures from the old conventional designs to make them better adapted to the universal need of the farm.

In order to make the small tractor what it is intended to be, a substitute for horses on a small farm, there are certain requirements which the farmer should have in mind in making his selection. The tractor should be light in weight. Figuring its rated draw bar horse power the tractor should weigh less than half as much as the weight of the horses it replaces. If it is a round wheel tractor, the driving wheels should be large enough in diameter to permit the tractor to work in fairly soft ground. It should be universal in its adaptability to farm traction power requirements. It should be made practical for general farm field work. It should be adapted to operate a gang plow, double disc, harrow, spike and spring tooth harrow. It should be adapted to use with the ordinary cultivator to cultivate between rows such crops as potatoes, corn, roots and other crops without damage to the crops. It should be adapted for use with the mower, binder, corn binder and potato digger, as well as farm wagon. It should be provided with the proper sized pulley for belt power and its rated belt horse power should be more than twice the rated horse power at the draw bar. It should be able to do all stationary work, such as running the ensilage cutter, small thresher, feed grinder, irrigation pump, wood saw and other belt driven machinery. It should be simple in its operation and control so that the man who understands the operation of the average gas engine will have no difficulty with his gas engine on wheels. It should be strictly a one-

man tractor; the controlling features should be under the operator's finger as he rides, whatever implement is being pulled, in the same way that the man controls his team of horses.

It should be adapted to use with the ordinary horse drawn implements on the farm so that the farmer need not buy new implements for it, except, perhaps, a gang plow. It should, in fact, replace the horses on the farm.

The average farmer either has, or will get, a light automobile just as soon as his means will permit; with it he will soon learn the advantage of the auto trailer for hauling light loads quickly.

If he gets the kind of tractor described he can gradually eliminate all of his horses and make his farming operation very economical, but if he gets a tractor that will only do part of his work so that he still has to keep his teams for cultivating and hauling, his investment is not economical. The horses have to be fed and cared for every day, whether they work or not, and one horse will eat as much as two cows. The average horse works less than one hundred days out of the year, the balance of the days he "eats his head off."

The small tractor only eats when it works, and the balance of the time requires no chores. While gasoline is climbing in price, most light farm tractors will use distillate as well as gasoline, and distillate is still cheap.

Figuring it in dollars and cents, the first cost of some of the light tractors is no more than the cost of the horses it displaces. The cost of maintenance is a great deal less than horses.

One farmer who bought a tractor last August started plowing when the ground was too hard to plow with horses. He plowed ten inches deep, which he could not possibly have done with horse power. He plowed ten acres per day and used two gallons of distillate per hour, which cost him eight cents per gallon, or \$1.60 for power to plow ten acres.

Any one familiar with plowing with horses can easily figure out how this compares with horses. He operated a double disc harrow with a spring tooth harrow behind it, and the drill behind that; performing all these operations at one time, and all with one man.

The saving in the cost of doing the work is not the only advantage of the light tractor, but the increase in the yield of the crops due to deeper plowing and better cultivation is of still greater advantage. On account of lack of horse power the farmers do not cultivate the land as much as they should. The proper seed-bed is not prepared and the weeds often get the best of the sown grain.

Such crops as corn and potatoes can be very much increased in yield, even in a dry season, by constant cultivation to conserve the moisture in the soil, and this will be done if the farmer has a tractor to do it with.

Practically all the small tractors are sold only for cash, whereas other farm implements have been sold on time. This seeming handicap to the farmer can easily be overcome, because last January the Federal Reserve Board ruled that a farmer's paper given as security for money



**RHUBARB**

NOW IS BEST TIME TO PLANT WAGNER'S IMPROVED WINTER RHUBARB. BERRIES AND SMALL FRUIT...

If planted now you should derive good results.

Write for Special Prices

**J.B. WAGNER**  
Rhubarb-Berry & Cactus Specialist  
PASADENA, CALIFORNIA

## CORN OREGON Yellow Dent

We have the finest stock of seed corn ever offered on the coast, hand selected and of high germination—ripens well and especially fine for silage or for green feed.

Write for prices. All our seeds guaranteed to comply with all the state seed laws. Also a complete stock of grass seeds, clovers, seed grain, etc. Send us a list of what you want now and get our prices.

**D. A. White & Co.**

SEEDMEN  
Salem, Oregon



*Oregon Grown*

**SEED**

*Wheat*

**MARQUIS**

For Spring Planting

Won \$1000 prize at New York as the best Wheat grown on the continents of America. Won \$3000 prize, Dry Farming Contest at Lethbridge, and sweepstakes at Oklahoma Dry Farming Contest.

**Price \$3.50** 100 lbs.

F. O. B. Portland

Write us for SEED WHEAT, BARLEY, OATS, ALFALFA, CLOVER, SUDAN GRASS, FARM and FIELD SEEDS for the Northwest.

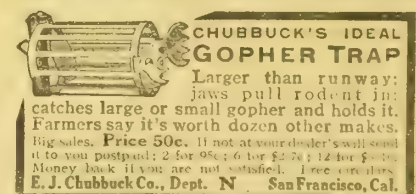
**Samples and Prices on Request**



**PORTLAND**

**SEED CO.**

PORTLAND, OREGON



**CHUBBUCK'S IDEAL GOPHER TRAP**

Larger than runway: jaws pull rodent in: catches large or small gopher and holds it. Farmers say it's worth dozen other makes.

Big sales. Price 50c. If not at your dealer's send it to you postpaid: 2 for 95c; 6 for \$2.75; 12 for \$5.00. Money back if you are not satisfied. Free catalog.

E. J. Chubbuck Co., Dept. N San Francisco, Cal.

**STRAWBERRIES**—Pure bred plants. Everbearing varieties. Asparagus, Rhubarb and all vegetable plants. An interesting catalog. Send for yours TODAY. **KELLY GARDENS**, East Spokane, Wash.

## FARM LOANS

Any amount from \$1000 up on well improved farms. Quick action. Reasonable terms.

**Holland-North-American  
Mortgage Company**

1002-03 American Bank Bldg.  
SEATTLE, WASH.

## Seed Corn

Acclimated, for sale. I have grown corn and made silage the past four years with excellent results of the Golden Dent (Bloody Butcher) variety, which matures early.

Write for prices.

**B. S. FRYAR,**  
Sumner, Wash.

## SEED CORN

Wonderful White Dent Ensilage Corn, acclimated in Western Washington; 8 to 11 feet high, matures early in September. Price, postpaid, shelled, 20c per lb; 10 lbs., \$1.75; 10 ears, \$1.00.

**T. McCLINTOCK,**  
Burley, Wash.

## PLANT

### Walnut Trees

ORNAMENTAL and SHADE  
TREES and FLOWERING  
SHRUBS.

Thus you can enhance the value of your place by a little attention to nut growing and ornamental planting. This may be brought about at a surprisingly small cost in proportion to the actual value afforded. Here are some of the select varieties—

#### IN WALNUTS:

Franquette, Mayette, Chaberte, Cordiformis and Sieboldi.

#### IN ORNAMENTALS:

Hydrangeas, Lilacs, Snowballs, Syringas, Deutzias, Mountain Ash, Spireas, Labernums, the great variety of roses and small evergreens.

We have as fine an assortment of the staple deciduous shade trees, shrubs, vines, roses, etc., as can be found in any nursery in the West. A line will bring catalog and information. Our salesmen cover almost every field.

Let us hear from you.

Good stock. Prompt service.

**Washington  
Nursery Company**

Toppenish, Washington

#### Choice Grades of

Shrubs - Plants - Vines - Trees

Please let us know your needs early and get a copy of our catalog and prices.

**BREITHAUP NURSERY CO.**

C. F. Breithaupt Prop.  
Kennewick, Wash.



borrowed to purchase farm machinery could be rediscounted at the Federal Reserve banks at low interest. The country banker can now take a farmer's note, given to secure an advance for the purchase of livestock, seed, fertilizer and farm machinery, and rediscount it for six months at the Federal Reserve Bank, of which the banker is a member. When the note falls due at the expiration of six months, the country banker may accept a renewal note and rediscount that.

This transfers the financing of the farmer for improvements from the shoulders of the implement manufacturer to that of the banker, where it rightly belongs.

This should be quite an inducement for farmers to purchase light tractors, as by this means they will reduce the cost of production, increase their yield and their profits so that in this way the tractor pays for itself and makes life on the farm more attractive.

### STUMP BLASTING HINTS.

#### Care Will Prevent Accidents.

Here are some of the precautions which are being urged by Carl Livingston of the University of Wisconsin, who for several years has been engaged in land clearing in several states:

"Don't investigate a misfired hole for the rest of the day—work in another part of the field.

"Don't allow dynamite cases to shift and bounce or to rub against iron bolts when hauling.

"Don't store dynamite or caps together or place either of them in a valuable building.

"Don't store fuse, caps, or dynamite in a damp place, or where they will be handled by children, or disturbed by chickens, cats, or mice.

"Don't use a smaller cap than Number Six.

"Don't keep dynamite too long—its usefulness diminishes.

"Don't push the fuse into the cap—ease the cap carefully on the fuse.

"Don't try to draw a misfired charge from a hole—shoot another off alongside it.

"Don't thaw dynamite by placing it in hot water or before an open fire.

"Don't cut the fuse with dull tools.

"Don't 'crimp' on the caps with your teeth, a knife, hammer, or a rock. Use a crimper, made especially for the purpose.

"Don't use a cheap fuse, and never cut it too short—that's dangerous economy.

"Don't have anything except a water-tight connection between cap and fuse in wet work—smear the joint with soap, tallow or axle grease.

"Don't tamp the hole with an iron bar—use wood.

"Don't tamp hard until at least seven inches of well pressed soil is over the charge."

### TESTING SEED CORN.

Lee M. Lampson, Agriculturist.

Can you afford to plant corn that will only bring you two-thirds of a stand? This was the case in many fields in Benton County last year. The use of one-third of the land was wasted, one-third of the crop was lost as a result of not taking from a few minutes to an hour to test the corn before it was planted.

There is positively no way of determining what per cent. of the kernels on an ear of corn will germinate without testing. You will find in the same lot of corn one ear which bears 95 to 98 per cent of strong germinating kernels and on another ear you will find that only 50 to 60 per cent of the kernels will germinate at all and many of those will only send out very weak sprouts. If you plant the grain from this last type of ear then you will wonder why there are so many places where the corn does not come up and you will also wonder why a lot of the stalks are weak and spindling and bear nubbins instead of good ears of corn. Can you afford to take chances on such results? Is not the hour that you will spend testing your corn a good investment when it will avoid any chance of such results?

Below are two very simple and convenient methods of testing your seed corn.

We will suppose you are going to test 25 ears. Lay the ears out in a row and number them, then take a piece of white cloth and mark it off in 25 squares and number them from 1 to 25. Take 6 kernels of corn from each ear of corn, placing the 6 kernels from ear No. 1 in square No. 1, and the kernels from ear No. 2 in square No. 2, etc. When you have all the squares filled with 6 kernels of corn from the ears, roll the cloth, beginning at the edge and rolling so that the kernels will stay on the squares in which they are placed. When the cloth is rolled up tie a string around it, saturate it with water, put a wick in one end, letting the end of the wick hang in water and place the roll and the dish of water in a moderately warm place. See that water is kept in the dish. After 7 or 8 days, unroll the cloth carefully. In many cases you will find something as follows: In square No. 5, for instance, each of the 6 kernels will have thrown out good strong sprouts. Perhaps in square No. 17 two of the kernels will have good sprouts, 1 of them a weak sprout and the other 3 no sprouts at all. You will then, of course, go back to No. 5, from which the kernels in square No. 5 were taken, and lay this ear up for seed. You will take No. 17, from which the kernels in square No. 17 were taken, and feed it to the chickens or hogs. Thus you will have all ears for planting which are very high in germination, and you will have all ears which are low in germination fed to the pigs or chickens where they will do some good, instead of having them planted in the field where they will cause you a big loss.

Most of the farmers who have saved seed corn have saved it on the ear, so that it could be tested. Practically all of the firms which are handling seed corn are carrying seed corn on the ear this year so that it can be tested before planting. This testing of seed corn is absolutely essential to maximum results in corn growing. The firms who are handling seed corn are co-operating with the grower by handling the seed on the ears so that it may be tested before planting in order to avoid serious loss. This leaves the matter of avoiding this loss absolutely in the hands of the grower. When the test is so simple and takes

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so little time can the grower afford to let it go and take the chance?

### FIELD PEAS

The field pea is without doubt one of the best substitutes for summer fallow. It is the best annual crop for enriching the soil. It makes excellent hay, it is good for hogging off, and it makes a good cash crop if grown for seed.

Field peas might well occupy a larger place in the cropping systems of Washington than they do at present. Besides being a valuable crop for feed or seed it adds nitrogen to the soil and leaves the ground in excellent condition for fall grain.

Where peas are grown on land for the first time the seed or soil should be inoculated. The easiest way to do this is to get a pure culture of the nodule bacteria in liquid form and pour it over the seed and mix it in thoroughly just before planting. This culture may be obtained from the Experiment Station at a cost not to exceed twenty-five cents per acre. The inoculation can also be accomplished by means of soil from a garden in which peas have been grown.

Field peas should not be grown continuously on the same field on account of the pea weevil. In case the seed contains "buggy" peas, they should be treated with carbon disulfid in an air tight container for 48 hours before

planting. Carbon disulfid may be obtained at any drug store at 25 to 35 cents per pound. One pound is enough to treat a space ten feet square and five feet high, if there are no cracks for the gas to leak out.

The Bangalia field pea has given the largest average yield of seed of any variety in the experimental tests, according to E. F. Gaines of the State Experiment Station, at Pullman. During the past three years it averaged three bushels more per acre than the Amaroti and eight bushels more than the Kaiser. The Bangalia variety matures earlier than any of the others and breaks less in threshing on account of having smaller seed than the others. It produces less forage than some of the later maturing varieties like Golden Vine, Prussian Blue, Mackay or Kaiser.

### MODERN FARMING METHODS

C. J. Zintheo, manager Agricultural Engineering Co., Seattle, called at the office recently while on a trip through the Coast Section. Mr. Zintheo reports a growing demand for silos, tractors and dairy farm equipments. In fact, every good sized farm in the Coast Section is becoming a factory by itself. Gasoline power and modern machinery is doing well most of the hard work where intelligent planning paves the way.

## IRRIGATION

Adequate, available moisture during growing seasons.

### IRRIGATING ALFALFA.

At the University Experiment Station Farm at Davis, California, it was shown that from 30 to 36 inches of water produces more economical alfalfa crops than does a greater or a less quantity of moisture. The average yield for six years from the unirrigated checks was 4.07 tons of hay per acre.

The largest average yield, 9.28 tons, was produced by applying 36 acre-inches of water per acre, in 4 nine-inch irrigations.

But the most economical yield was produced with 30 acre-inches of water per acre applied in four 7½-inch irrigation, 8.99 tons of alfalfa hay being produced. The average increase in yield of .29 tons per acre by using 36 instead of 30 inches in a season was not sufficient to pay for the increased cost in water and labor. Between nothing and 30 inches, the yields increased uniformly with the increased amounts of water applied.

A slight decrease in yield was shown from four 12-inch irrigations, while a decided decrease resulted from four 15-inch irrigations, which produced but 8.20 tons of hay per acre.

At the end of the six-year test a fair stand of alfalfa still remained on all checks excepting those receiving either no irrigation, 12 inches, or 60 inches per season. In the latter, not more than 30 per cent of the original stand remained.

### PUMPS AND IRRIGATION.

The National Pump Company, of Seattle, has recently installed a Typhoon pump, which they manufacture, of 5000 gallons per minute capacity, at Fir, Washington, to serve in a community drainage plant. It is operated by gasoline distillate power at a very low cost, throws a 12-inch

stream, and does efficient service. Captain Anderson, on Bainbridge Island, has a 50 gallon per minute Typhoon pump which serves his purpose amicably.

C. Dameyer, at Renton Junction, put in a small Typhoon pump, which easily raised the water 70 feet.

At Mount Vernon, Washington, a large number of farmers are using these pumps for domestic purposes. In the production of garden truck crops more than double the yield is obtained where water is judiciously applied. In the fertile valley immediately south of Seattle the government straightened the Duwamish River channel, leaving some of its former beds dry. Owners of lands adjacent to these beds claim damages being able to show that the annual rents paid where water can be pumped from the river are three times as large as from land not irrigated.

A large number of farmers throughout the Coast Section of Washington are figuring on irrigating some of their lands for intensive cropping. One farmer states he can put his wheat-vetch crop, which was sown last fall, into the silo by the early part of June, then immediately plow and plant corn which he will cultivate thoroughly and irrigate a couple of times in July and August and have a good tonnage ready for the silo by the middle or last of October, in time for another seeding of vetch with wheat or rye. When a good irrigation plant can be put in for less money than the price of additional cleared acreage to grow an equivalent crop the conclusion is that it will pay and whether it is a pump, hydraulic ram or gravity depends, of course, on the particular tract under consideration.

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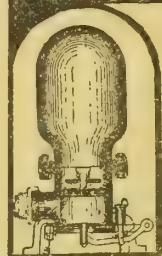
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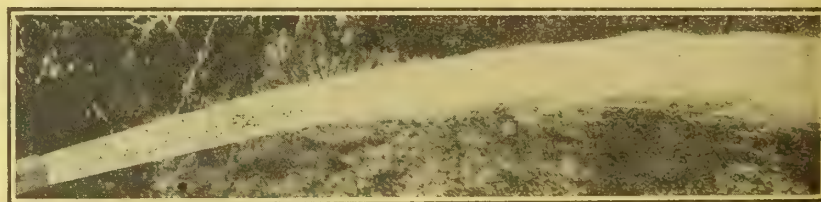


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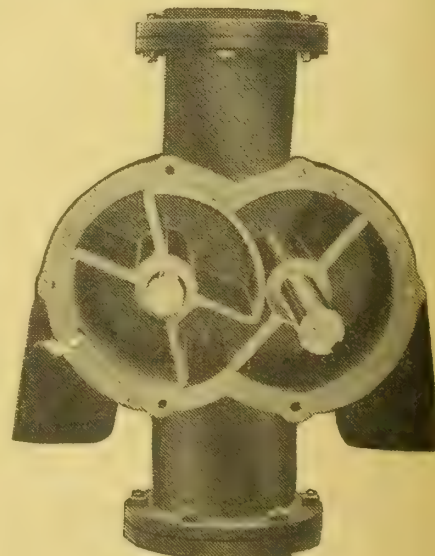


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## HOUSEHOLD DEPARTMENT

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## PLANTATION MORNING.

By Archibald Rutledge.

A thousand pines are burning bright,  
A thousand warders of the night  
Along the gorgeous sunrise line  
In red pulsating armor shine.  
Far-glowing as a mystic sea,  
The sedgefield's rolling goldenly.  
All dewy-tender is the blue.  
Or early skies; while breathing through  
The trembling pines a dawn wind seems  
Whispering the giants from their dreams,  
Until their voices, nobly one,  
Go through joyful to the sun.

## Genius of Mountains, Forests and Waters

S. J. Harmeling, Vashon, Wash.

(Continued from last month)

I believe one of the most beautiful hedges I ever saw, and there were miles of it, was in the vicinity of Oak Harbor, Whidby Island. It was a spontaneous growth which started along the old V-shaped rail fences, of native roses, Oregon grapes, gymnocarpas or snow berries and here and there a twining lonicera. The roses were in bloom and the birds had nests in this safe retreat and were wild with singing. The hedges had taken in the whole fence and the growth was compact as if it had been clipped. Prof. Barnett, of Pullman, who was with me, declared he had never seen anything more beautiful, made by the hand of man, for such a purpose.

We have another erricaea, Gaultheria shallon. The fellows who have to plow newly cleared land know it best by the name of salal, and when they run into a clump of it with the plow they usually embellish it a little with some adjectives. But in England they love it and have planted hundreds of acres with it. If you could see a group of it, properly arranged in the right place, about four or five feet high, with its rosy shoots and bluish urn-shaped flowers in spring and the jet black large berries in later summer, you, too, would admire it more than a clump of skimmias or andromedas. The whole plant looks beautiful 12 months in the year and its berries make finest jelly in the world. I would like to see the basement of some bungalow bordered with this, the Oregon grape and huckleberry. I believe it would look better and be more home-like than if we planted laurustinus, acubad, and daphnas from foreign countries. We might plant among them some Ledums labrador tea. They, too, are beautiful, having the underside of the evergreen foliage covered with a down as deep and thick as felt, and the flowers are in cymes or panicles and as beautiful as those of the hoyia. We might add some of the arctostaphylos, the winter greens and the kinnikinicks with their small evergreen thick leaves, pink flowers and vermilion berries. This forms a mat on the ground eight inches thick and so dense that not even the

Lyric in this fair morn of spring,  
The larks are flying wing and wing;  
Through twinkling dews ambrosial  
Echoes the bobwhite's ringing call;  
Where mistily the woodlots meet,  
The cardinals are whistling sweet;  
The mock-bird's singing joyous-free,  
The bluebird's warbling sunnily;  
From glistening elms and laurels tall,  
Bright restless blue jays fly and call,  
Scattering the shining drops that fall;  
High in the dreamful sycamores  
That sentinel the river shores  
The wild dove suns her rosy breast,  
Visioning love, and mate, and nest.

mesquite grass can come up through it. Don't you think there is more sentiment and emotion in these things than in foreign stuff? They are the children of our own wild-wood. They are beautiful and we must learn to love them. Our genius of the mountains and woods and waters tells us that.

Our Madrona or arbutus menziesii is the most majestic of the ericaceae family. It has flowers like the lily of the valley and red berries in bunches like grapes which persist like those of the holly, and in a prolific specimen the whole top looks as it was washed with peagreen and chinese vermilion. Our children in generations to come will love it more than we do. We are also rich in deciduous shrubs. If you want a floriferous outburst in very early spring that almost overwhelms you plant a group of our native flowering currants, ribes sanguinum. If you want to see a sight go over the Seattle boulevards when they are in bloom. It is hard to find elsewhere such a sea of bloom.

For the background of our ornamental planting we have some beautiful large shrubs and small trees. We have two elders, the Sambucus glauca with rather large dark blue berries and the S. Calicarpa with red and in some specimens yellow berries. We have the best and largest dogwood of any land in Cornus nuttallii. It will grow 50 feet or more high, has large white flowers and scarlet berries and often blooms a second time in the season. In autumn the foliage turns to such an intense scarlet that it looks like a fire on the hillside. We have also the S. stolonifera with blood-red stems in winter and lead colored bunches of berries. We have two beautiful Saxefragas Philadelphus gordoniana and P. lewisii, Mockoranges; both are beautiful. Our native filberts grow to immense size for a shrub. They have long catkins and bloom during February. They are very ornamental in the proper place. The silk tassel bush or quinine bush, Garrya elliptica, has white wooly leaves, pleasantly sub-acid fruit, and the sterile catkins are 4 to 5 inches long and look like fringe. The Coffee berry, or Rhamnus, belongs to the Buckthorn family. It is also known as cascara sagrada. It has black fruits and with us grows into a small tree. I think it quite ornamental in some situations among dogwoods, elders and hard hack.

We have the choke cherry, the sweet shrub, the ninebark, the spireas the mountain mahogany, thornapple, mountain ash, and a host of others, all ornamental and many useful, and beautiful in the proper place.

Our conifers are famous all over the world. Our white fir, Abies concolor, of the Sirras and Cascades, is one of the most beautiful ornamental trees in the world. It has long soft sage colored leaves, grows into a beautifully symmetrical pyramid from the ground up and is vigorous. There is no fir in Europe or anywhere that can compare with it. The same is true of that other fir, Abies grandis. This has long, shiny

## GARMENT PATTERNS

Order by number. See description below.



1632—Ladies' Apron—Cut in 3 sizes: Small, Medium and Large. It requires 5 yards of 36-inch material for a Medium size. Price, 10 cents.

1658-1659—Ladies' Costume—Waist 1658 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 1659 cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 7½ yards of 44-inch material for the entire gown for a 36-inch size. This calls for TWO separate patterns, 10 cents FOR EACH pattern.

1650—Girl's Dress, with or without Over Blouse. Cut in 4 sizes: 8, 10, 12 and 14 years. It requires 3½ yards of 44-inch material for a 10-year size for the dress with 1½ yard for the over blouse. Price, 10 cents.

1652—Girl's Dress—Cut in 4 sizes: 4, 6, 8 and 10 years. It requires 2¾ yards of 44-inch material for a 6-year size. Price, 10 cents.

1636—Ladies' Dress—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6 yards of 44-inch material for a 36-inch size. The skirt measures about 3¾ yards at the foot. Price 10 cents.

1638—Ladies' House Dress—Cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 7¼ yards of 36-inch material for a 36-inch size. Price 10 cents.

1501—Ladies' Shirt Waist, with Convertible Collar—Cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 2½ yards of 40-inch material for a 36-inch size. Price, 10c.

1644—Child's Bombers—Cut in 5 sizes: 1, 2, 3, 4 and 5 years. It requires 3 yards of 27-inch material for a 4-year size. Price, 10 cents.

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leaves. We are also rich in Spruces. Our tideland spruce, *Picea stichensis*, is the largest spruce in the world.

It is a beautiful tree in form foliage and wood. Our white spruce *Picea engelmanni* rivals in beauty of foliage the famous Koster's spruce of Colorado, makes a beautiful pyramid and will be vigorous and full of foliage and branches when Koster's begins to look ragged. Our hemlock, spruce, Patton's spruce, and Douglas spruce are all wonderful trees. The latter we usually call a fir, but it is a pseudotsuga. It is distinguished by the fringelike bracts over the scales of the cones. We have the largest Arborvitae in the world. We usually call it cedar, but there are only three cedars in the world, America and Europe have none. One grows in Africa, one in India and the other in the Holy Land. We have several varieties of Pines and may grow if we wish the large and the smaller Sugar pine, the yellow pine, the contorta, the knob cone and the nut pine.

Of deciduous trees we have also a wide variety from which to choose for our ornamental planting.

I am quite sure our genius does not say; go, son, daughter, plant Spanish and Japanese and Hungarian firs and spruces, but go plant those which are indigenous, acclimated, beautiful and in harmony with this wonderful environment.

I would like to see somewhere, here, a home with the ground planted according to approved landscape gardening rules, only native shrubs and trees in the borders and background, and instead of using Dutch bulbs and foreign perennials in the flower borders and among the shrubbery have only native bulbs and flowering perennials. Suppose we could see in these borders such of the lily family as *Ethuriels Spear*, the Washington lily, a most beautiful white one with flowers four inches long, some *Leopard lilies*, Hum-

boldt's lily, the tiger lily, the beautiful columbianum, an orange variety with yellow anthers; some of the beautiful fritillarias or checkered lilies, some dogtooth violets or erythroniums, the gigantea and grandiflorum. The former has large mottled leaves and creamy white flowers. Also some butterfly tulips or *Mari-posa lilies*, the calochoratus as *Satin Bell* and *Alabaster Tulip*, the *Camassia* bulb with its deep blue flowers and its historic importance as an Indian food plant, the soap plant with its large bulb, the false *Salomon Seal*, the *Clintonia*, the *Wakerobins*, some of the native terrestrial orchids as *Lady Slippers*, *Lady's tresses* and several varieties of *Habernarias*, some of the beautiful *Aquilegias* as *truncata* scarlet and yellow with an immense spur, some of the only red perennial larkspur in the world, nudicaule, some of the 10 *mimulus* and of the 10 varieties of violets, the *Paeonia* and bleeding hearts.

We have a host of perennial plants available, from the *Fringe Cups* down to the *Ginger Root*.

Would not you too like to see such a place?

Such is our legacy, our heritage. A land with the eternal snow-capped mountains for a background; valleys and woods and streams and salt water expanses for the middle and foreground; with the soft southwest wind chasing away eastward the frosts and snows of winter and bathing into perennial life all nature. A land watered with the rains and dews of heaven; free from the cyclone, the hurricane and the awful thunderstorm. A land where everything works together to give man a peaceful and happy home.

It seems nature has done all she could do for us. The voice of the Genius of this land comes to us as the voice of God came to Adam in Eden. Go, get busy, cultivate and dress up the environment with the material you have about and make of this land a better Eden.

## THE NEW ROSES

John Gill, West Berkely, Calif., Before the Pacific Coast Association of Nurserymen.

I have before me a very broad subject, as so many new varieties have been introduced during the past few years. Let me confine my remarks to those that I have observed doing well in this locality, as it is very evident that a rose might give perfect satisfaction in this vicinity, be an utter failure in the interior of the state, or give only partial success in the northern part or southern part of our country.

Taking into consideration that when new roses are sent out, as a rule they are so weak from over propagation that it takes years before one can get a plant of sufficient size and strength to observe its quality, and for that reason I will not mention any of the varieties sent out the past season. I will also eliminate from my list those that have proven poor in this respect,—as I could not recommend a poor grower to any one when there are so many strong growing varieties placed on the market every year.

There has probably been more advances made along "the yellow line" than any other. Some of those which have impressed me most are *Juliet*, a rose that will grow almost anywhere and a very free bloomer of its class, *Rayon D'Or*, a decidedly clear yellow, a color that has always been lacking in free blooming roses, and I am told that the introducer of this variety has one still finer to place on the market shortly. Other fine yellow roses are *Sunburst*, *Mrs. Aaron Ward*, *Lady Hillingdon*, *Arthur Goodwin*, *Mad. Ravery*, *Le Progress*, *Mad. Maline Soupert*, *Lady Pirrie*, *Marquise de Sinity*, *Beauty de Lyon*, *Duchess of Wellington* and *Mrs. Edward Herriott*, "the Daily Mail Rose," while not a decided yellow, has a great deal of that tone, and is a great acquisition.

In pink roses we have *Radiance*, *Dorothy Page Roberts*, *Jonkeer J. L. Mock*, *Miss Cynthia Forde*, *Mad. Leon Paine* and *George Arends*, also known as the *Pink Karl Druschki*. This is a strong grower and very free from thorns.

In reds we have the *Glorie de Chedane Guinoisseau*, *George Dickson*, *Venus Warrior*, *Chateau de Clos*, *Verigeot*, *Laurent Carle* and *Edward Mawley*.

In white or light shades we have the *Ophelia* and *Antoine Revoier*. The last named we have had for several years, with very little attention being paid to it,—but it is now grown under the name of *President Taft*, and there promises to be a good demand for the same.

In single roses, which are now becoming very popular, we have the *Irish Fire Flame*. This rose is a little darker than the *Irish Elegance* and also has a more leathery foliage. It is likely to become very popular in the near future.

In climbers we have the *White and Pink Cochet*, *Climbing Lady Ashton*, *Madam Jules Gravereau* and *Ramona*. I have not mentioned any of the *Polyantha* class as we find very little call for that class of roses, but if I

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

**OREGON NURSERY CO.**  
ORENCO, OREGON

## Milton Nursery Co.

**WALNUT TREES, SHADE and ORNAMENTAL TREES**

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

**Milton Nursery Company, Inc.**  
Milton, Oregon

## HOPE FARM SEEDS

**WHITE SPRING VETCH**—Pure creamy white (new), good as split peas for the table; 100 per cent better than common vetch for stock. Try it and get a start. 10c per package, 6 packages for 50c.

**HILL SELECTED POTATOES**—Varieties, Factor, Up-to-date, smooth high quality, heavy yielders, very best two. State quantity wanted and write for prices.

**FIELD CORN**—Acclimated to the Coast section. Strong vitality, kept dry sure to grow. Varieties, Yellow Dent and Rutherford, both good. State quantity wanted when writing for prices.

As the demand is likely to be stronger later in the season, to insure your order being filled, please make reservation as early as possible.

Kindly mention this paper when writing.

**C. E. FLINT & SONS**  
BLAINE, WASH.

## PORTLAND WHOLESALE NURSERY COMPANY

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

### SPECIALTIES

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.

## GROUND LIMESTONE

Thousands of farmers will apply ground limestone on their soils early this year. Price very reasonable.

We supply it in any quantity from 100 pounds to ton or car-load lots.

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Tacoma, Wash.



## SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



were to mention one it would be the Orleans. This rose is a very free bloomer, which makes it very desirable for bedding purposes.

There are also several of the Killarney type. They are fine roses under glass during the winter months, but for general outside planting, they are not a success in this locality.

I have been observing with a great deal of interest the new roses in the Exposition Grounds, and there are several which have impressed me very much. I am glad to note that it is rumored that one of the best of them is of California origin. May the time soon come when our Pacific Coast may be the introducers of new roses annually.

### POPPIES.

Poppies may be sown directly on the surface of ground that was prepared last fall. If the bed was not prepared at that time, it should be spaded up as soon as the ground is dry enough, and the poppy seed sown evenly over the surface. The seed should be slightly covered by drawing the back of the rake over the bed. Poppies do not stand transplanting, and must be sown where they are to bloom. Care should be taken to distribute the seed evenly and not in bunches, for if there is much disturbance of the roots at the time of thinning, the plants will not do so well as when left undisturbed. The Shirley poppy, a very showy and attractive variety, may be obtained in many colors. The individual blossoms, however, are very short lived, and as compared with many other plants its blooming season is short. The plants are so attractive when in bloom, however, that they are well worth planting. A succession of sowings will prolong the blooming season.

The California poppy should also be sown early, but does not require as early sowing as the other poppies. It is handsome and will bloom during a longer period than the Shirley poppy.

### KILL THE FLIES.

Kill all the early flies possible and remove rubbish, filth and animal manures to the fields or cover over so there will be no breeding places for flies near at hand. This is an important step for good sanitation and health on the farms.

### GARDENING INTENSIVELY.

#### On a Small Plot of Ground.

Where a two or three crop system is used in connection with vegetables adapted to small areas, a space no larger than 25 by 70 feet will produce enough fresh vegetables for a small family. Corn, melons, cucumbers and potatoes and other crops

which require a large area should not be grown in a garden of this size. Half an acre properly cultivated with a careful crop rotation may easily produce \$100 worth of various garden crops in a year.

#### Working the Soil.

To determine when heavy soils are ready for plowing a handful of earth should be collected from the surface and the fingers tightly closed on it. If the ball of compacted earth is dry enough for cultivation, it will fall apart when the hand is opened.

A garden spot near the house is often more desirable than a plot which is in better tilth but located at an inconvenient distance.

A gentle slope towards the South is most desirable for growing early crops, while it is a decided advantage to have the plot protected on the north and northwest by either a hill, a group of buildings, or a board fence.

Drainage of the garden is of great importance. The land should have sufficient fall to drain off surplus water during heavy rains and yet not be so steep that the soil will be washed or gullied. The surface should be nearly level so the water will not stand in hollows or artificially drained.

#### Fertilizing and Watering.

Barn yard manures are suitable for fertilizing the garden tracts, providing they are sufficiently decomposed so as not to contain any weed seeds. Most garden vegetables require fertilizers rich in nitrogen. An application of 100 pounds nitrates of soda to the acre may be used to good advantage. The main point is to get a good amount of humus in the soil. When the crops have started there is no element more important than water. Apply it judiciously, being careful not to water log the soil, but keep the ground moist enough for good growth, particularly when the temperature rises above 75 or 80 degrees.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### STANDARDIZE FOR EXPORT.

Demonstration by Tillamook Association.

The dairymen of the Pacific Northwest, realizing that the time to begin the export of butter is at hand, have taken steps to standardize the product. Perhaps not so effectively as might be desired, but a start has been made in the right direction by the concerted efforts of numerous organizations, both directly and indir-

ectly interested in the development of dairying.

There is a splendid example of the operation of a plan to standardize a dairy product as demonstrated by the Tillamook county creamery association, of Oregon. That county was for a long time isolated, having only one boat which made occasional trips into its only harbor. Under such conditions cheese was the only product that could be marketed. This meant that they were driven to specializing in cheese and they have

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON

## ORNAMENTAL PLANT ARRANGEMENT

An important feature in the planting of ornamentals is to have a succession of bloom throughout the season; also to arrange the planting as to size of the plants.

Our catalog is arranged for the purpose of giving this information, and it is sent free on application. Many of our patrons are using it as a guide to their entire satisfaction. Send for a copy today.

J. J. BONNELL

28th Ave. and East Galer St.

SEATTLE, WASH.

## SEED CORN

Pearsall's Favorite Ensilage Corn  
Pearsall's Bloody Butcher  
Pearsall's Forage Popcorn  
Golden Bantam Sweet Corn

Acclimated—10th crop—well matured—perfectly dry. It will grow. Price 20c per pound f. o. b. Order early to insure supply.

IRA J. PEARSALL,

Enumclaw, Wash.

## SEEDS

It is important that every seed planted has strong vitality and that the entire quantity used is pure. "Highest quality," our motto

for more than a quarter century, has established absolute confidence. We offer this year very choice seeds of vetch, clover and other grasses, corn, kale, marrow cabbage—grain, field, and complete list of garden seeds. Our new catalogue, a practical guide, is sent free to those who send in their names at once.

Poole's Seed and Implement Co.  
1507 Pacific Ave. Tacoma, Wash.

## Plant Pear, Walnut and Ornamental Trees

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

## JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312, and several world record 2 year old cows. We offer for sale valuable youngsters.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Duke Canary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond or call.

C. E. ELDRIDGE,  
CHIMACUM,  
WASH.

Kindly mention this paper



done so well that although they now have rail connection with Portland, cheese is still the only product marketed.

The output of 19 of the 23 factories in the county is sold by one man and supplies are bought by one man in wholesale lots, which means a great saving.

Standardization, however, is the factor that has brought profits to the Tillamook people in much greater measure than co-operative buying and selling. Advantage of this object lesson has been taken by the forces behind the federating of the country creameries of Oregon and standardization of all butter will be the first project attempted.

The Tillamook Creamery Association employs an expert cheese maker who makes weekly inspections of all the 19 factories, scoring one cheese from each vat made. All the cheese that is up to the requirements is branded with the association brand, which stands for quality. Cheese that for any reason falls below that standard is sold as second-grade cheese under another brand and thus is not allowed to mar the good name and sale of the first grade cheese. It is needless to say that after five or six year's operation under such a plan very little second grade cheese is made.

Another very important factor which the Tillamook Association has brought about and which it is hoped will also be brought about on a larger scale with the new embryo association, is the confidence the people have in the industry. There is no hesitancy about going into the dairy business in Tillamook county. All one has to do is to produce the butter fat and the very best market is assured.

The figures for 1915 are not yet available, but in 1914 the farmers of Tillamook county averaged 38 cents per pound for their butter fat delivered at the cheese factory a few hundred yards away. In 1913 they averaged 38 1-3 cents and in 1912 41 1-3 cents. These prices were realized in spite of the fact that summer dairying was practiced and the cost of production was much lower than in sections where winter dairying is practiced.

Confidence in an industry has always followed successful co-operative marketing, and it is the establishment of this confidence in the future of Oregon's dairy industry that is spurring the leaders in the great movement now on foot to federate the county creameries, to put their best efforts back of it in order to insure its success.

#### CALF SCOURS.

There are two kinds of scours that commonly affect the young calf—white scours, sometimes called calf cholera, and common scours, caused from indigestion. The white scours is a contagious form, and if the calf becomes affected at all it is within a few days after birth. The germs gain entrance to the body through the umbilical cord soon after birth. The remedy for this disease is a preventive one, and the best way to insure against it is to keep the stalls and pens clean. Stalls used for calving purposes should be cleansed and disinfected after each calf is born. Additional precaution should be taken by tying a string around the navel cord of the young calf immediately

after it is born, and applying some good disinfectant to the exposed parts.

The common scours, or indigestion, may usually be traced to faulty methods in feeding the young calf. The principal causes are as follows: overfeeding, feeding cold milk, irregular feeding, feeding alfalfa or other highly nitrogenous hay to the young calf, using dirty pails, and dirty stables.

The first sign of indigestion or scours among calves is usually the characteristic foul-smelling dung. When a calf shows the first signs of scours the milk should be reduced one-half or more, and then gradually increased again as the calf improves. This method of treatment is usually sufficient to check a mild case. There have been many remedies suggested for treatment of the scours, and all are used with more or less success. The feeding of dried blood to calves has proved very effective, according to the Kansas Agricultural Experiment Station. This may be fed by adding about a teaspoonful of soluble dried blood to the milk and stirring it in well. Dried blood not only acts as a tonic, but often is fed along with milk at each feed on account of its feeding value as well as its value as preventive treatment against the scours. A fresh egg given to the calf when the scours is first noticed often checks the attack. Caster oil is used with good results. Two tablespoonfuls is sufficient for a dose. This may be given as drench mixed with milk.

#### JERSEY COW SOPHIE 19TH.

This noted cow illustrated in our February number has 16 grand daughters which have surpassed her performance at same age.

She weighs 1000 pounds and has earned enough to bear the loss of a few hundred pounds of cow beef, and is going right along paying a big profit.

She scored 91¼ per cent of the perfect scale of points under judgment of a veteran breeder of dairy cattle. Without regard to her valuable breed she embodies ideal dairy type.

#### JERSEY CATTLE CLUB MEET.

The forty-eighth annual meeting of The American Jersey Cattle Club will be held at the Club House, 324 West Twenty-third Street, New York City, on Wednesday, May 3, 1916, at eleven o'clock a. m.—THE AMERICAN JERSEY CATTLE CLUB.

R. M. GOW, Secretary.

#### THE COST OF MILK.

By W. J. Langdon, Sumner, Wash.

A recent Tacoma Daily News quotes Mayor Fawcett as saying in part: "Some of the dairymen who are crying hard times are keeping cows which do not average the year around a gallon and a half of milk a day."

That is true, Mayor, and there are a whole lot of them, too. A gallon and a half a day is 4,700 lbs. a year. The average for the United States is about 4,000 lbs. per cow of 4 per cent milk and 160 lbs. of fat. The Washington cows are doing a little better than that. Prof. Nystrum, chief of the dairy division Washington State College, gives the Washington cows credit for 4,500 lbs. of milk and 185 lbs. of butter fat. This is probably pretty high.

## Heavy Yeilding Registered Holsteins Pontiac and Dekol Breeding

A very large proportion of our cows have A. R. O. records and every one in milking condition is making a very satisfactory margin of profit, records up to over 100 lbs. milk per day.

Our entire herd is vigorous and developed for long time profitable dairy work.

From many years' experience we have found that dairying is profitable in proportion as cows of a fixed standard of production are bred and kept in the herd. (For years our sires have been selected with that purpose in view.)

The prices bidders at the sales have made when taking over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

**A. E. SMITH CO., Sumas, Wash.**

(or White Building Seattle)

Please mention this paper when writing.

## Waikiki Farm

Breeders of

JERSEY and Ayrshire CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

## PUGET SOUND HERD HOLSTEINS

Our consignment to the sale to be held in Snohomish May 3rd and 4th consists of 17 head of which a number of the females are heifers and cows with good records; also a few of them are safe in calf to the great bull "Sir Chimacum Wayne." One of the bulls is a son of this great bull. The records of his dam, sire's dam and sire's granddam average higher than any bull in the world for milk. The dam of this young bull has to her credit for 10 months 26,726.9 lbs. milk and 826 lbs. butter.

Wm. Bishop, Prop.,

Chimacum, Wash.



Sen 2-year-old cow Korndyke Beet's De Kol, milk 576.5 lbs., butter 21.9 lbs. in 7 days.

#### SKYKOMISH VALLEY HERD HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

## Moxee Valley Holstein Farm

There is now a rising market for good dairy cattle, but on account of spring floods here have decided to decrease our herd of

#### 40 HEAD OF LARGE TYPE HOLSTEINS

They were all tested for tuberculosis on March 28 by Dr. Robt. Prior and all proved sound. Anyone wishing stock with good records should not fail to get full particulars about this herd which is one of the best at practical dairy work in the country.

Inquiries cheerfully answered or make appointment to call and see the cattle.

**TYSON & McKELHEER**

Moxee City, Wash.



Again the Mayor says: "If the dairymen want to keep out of bankruptcy let them improve their stock and get better producers as other states are doing." Does the Mayor know what the other states are doing?

Prof. Haecker, Chief of Dairy Division, Minnesota University, gives the average production per cow in Minnesota as 4000 lbs. of milk and 150 lbs. of butter fat.

Wisconsin is the most progressive dairy state in the Union and has done more to build up the dairy industry than any other state; had in 1912 an average production of 170 lbs. of butter fat and something less than 4,500 lbs. of milk per cow.

The Mayor also says: "There is going to be a fight to the finish to prevent a combination of milk dealers for the purpose of charging extortionate prices for milk." The producer of milk receives anywhere from 4 to 4½ and sometimes 5 cents per quart at the farm. I have spent 20 years in the dairy business, and very few men have worked and studied more faithfully to reduce the cost of producing milk than I have. I have spent some 15 years of work and study in getting those "Better producers" that the Mayor calls for, and I must confess that I cannot make milk for what the Tacoma dairymen are getting.

I'll not try to discuss the cost of distributing milk as I know but little about that part of the business, but we all know that the cost is much greater than it should be, just as the cost of distributing groceries is much greater than it should be. But as long as 20 to 50 teams chase each other around the city as they are now doing, the consumer will have to foot the bill. My experience has been with the production of the milk, and I believe that I know something of the cost.

We keep a record of every pound of milk that each cow produces and we know what it costs to feed her. It costs us to feed our herd of 35 Jerseys \$10.40 per day, or 30 cents per cow, or an average of \$109.50 per year for each cow, or 13.3 cents per gallon for 5 cent milk, and the prices that we paid for this feed cannot be duplicated today. There are times in the year when we can get feeds cheaper, but not much. To the feed cost of 13.3 cents we must add a labor cost of 8 cents. Interest taxes and depreciation, etc., 4 cents, and 4 cents more for incidentals, making a total of 19.3 cents per gallon or 7.3 cents per quart the cost of making safe milk, for babies. For common market milk shipped in cans the cost for labor and incidentals would be reduced probably 6 cents per gallon, making the cost per quart 5.8 cents. A 3 per cent milk would cost some less but not very much. Those who have pasture could reduce this somewhat during about 6 months of the year, but with our high priced land the saving is not very great.

I have no record of the cost of keeping the average cow in this state but in the middle west it is given at from \$40 to \$60, labor 33 dollars and interest, taxes and depreciation \$30 or \$100 to \$125. In the New England states it runs from \$135 to \$140, in New Hampshire to \$150 to \$155, in Massachusetts I don't think we can feed as cheap here as in the Middle West, but cheaper

than in New England states. Allowing \$125 as the cost of keeping a cow a year—which is plenty low, and 4500 lbs. of milk—which is high, the milk costs 5.9 cents per quart. A poor milk costs less to produce than a good quality. I fail to see how the dairymen can be expected to take much interest in improving the quality of the milk under these conditions. If one man produces a good quality of milk it is dumped into the vat with all of the rest at the same price. What incentive is there for the one man to try to do better.

There is another thing that contributes to the cost of milk, and that is the condemning of so many cows for tuberculosis. I have a list of 10 herds containing 427 cows, of which 251 were condemned, and at the next test still more will be taken out. Shall the dairyman stand all of this loss? I fail to see why he should. Nine-tenths of these cows were giving their normal amount of milk, and were not spreading the disease or endangering the babies. Very few of them were dangerous to the public health. There is no way to distinguish between the safe cows and the unsafe so that it was necessary to destroy them all to protect the babies. The consumers' babies. Then why shouldn't the consumer pay some of the loss.

The dairyman is entitled to fair wages and interest on his investment, and he is not getting it. If the Mayor want the babies to have cheaper and better milk, why shouldn't he donate toward it as well as the dairyman. Abusing the dairymen will not get cheaper or better milk, it only arouses antagonism and makes matters worse. Thousands of dollars are being spent to protect and improve the water supply. Why not spend a little on the milk supply. It is just as important. Why not employ a good man who knows how and let him show the dairyman how to do better. There is a big chance for improvement in Tacoma's milk supply, but it cannot be improved by using a club or by abuse. Good wholesome milk is made only by the man who is cleanly, and interested in his work, and no man is apt to be interested if he feels that his efforts are not appreciated. If the people of Tacoma want safe wholesome milk let them show it by paying a little more to the man who is trying to furnish a good article. In no other way can they get an article that can be depended upon for the babies.

To my mind grading the milk and paying according to quality is the only practical method of improving Tacoma's milk supply.

I am not writing this because of any financial interest in Tacoma's milk supply. (Our milk all goes to Seattle babies and we are paid for producing a good article) but because I want the babies to have the best milk possible and the dairyman to have a fair show, and also because I believe that Mayor Fawcett is on the wrong track.

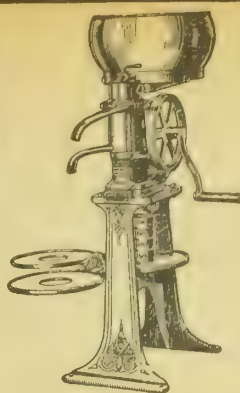
I believe that the methods of distribution are wrong and that if the Mayor could find some reasonable solution for that he could do more good for the babies (and the fathers) than he can by jumping on to the dairyman.

#### HOLSTEINS AT AUCTION.

May Third and Fourth.  
Among the 159 Holsteins consigned

## ANKER HOLTH

THE LEADER  
OF ALL  
CREAM  
SEPARATORS



Why! Because it is the latest invention and has so many improvements and features the others do not have.  
Don't fail to see how simple it is; be sure to see its construction.  
Don't fail to get its record as the closest skimmer.  
Don't fail to see how easy it runs.  
Don't fail to see that new feature, the Self Balancing Bowl.  
Don't fail to see the greatest of all oiling systems.  
Don't fail to get reports of what users say about it.  
Write us for catalog on the Perfection Milker, the latest invention, the nearest like hand milking.

**THE J. C. ROBINSON CO.**  
43 First St., Portland, Oregon

## GUERNSEYS

55 head of high grade and pure breeds everything from calves to cows and herd bulls. Will not sell a portion of herd.

**C. G. Henkel, Opportunity Wash.**

### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

#### Prices

For Ten Cows, Size 10x17½ in.

6 Sheets for \$.25, Postpaid  
15 Sheets for \$.50, Postpaid  
25 Sheets for \$.75, Postpaid  
50 Sheets for \$1.25, Postpaid  
100 Sheets for \$2.00, Postpaid

Address

Northwest Horticulturist and Dairyman  
P. O. Box 1604 Tacoma, Wash.

## GUERNSEY BULLS

Some very choice youngsters, Gov. of Chene breeding and out of imported dams. Here is your opportunity to increase the value of your future dairy herd.

### DUROC HOGS

Some fine Duroc Jersey pigs are ready to fill orders. Write us at once.

**AUGUSTINE & KYER,**  
First St., Seattle, Wash.

## HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.3 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

**MOUNTAIN VIEW FARM**  
Mt. Vernon, Wash.

Otto Rundgren, Prop.



—has the marvelous  
"Vortesspoon" one  
piece skimming de-  
vice.

**Gets All  
The Cream**  
—can be cleaned in  
3 minutes.  
A leader for 20 years.  
Ask for Catalog No. 57



## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

**FISHERBROOK FARM**  
Box 34, Milltown, Wash.

**WANTED**—To hear from owner of good farm for sale. State cash price and description.

**D. F. BUSH, Minneapolis, Minn.**

## Jersey Bulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

**EDWIN PETTETT**  
Dungeness, Wash.

## MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**

**R. F. D. 1 Lynden, Wash.**

## Position Wanted

As manager of stock or dairy ranch. Have had eleven years' experience in Washington. Reference on request.

**W. H. MINER,**  
Gen. Del., Tacoma, Wash.

## Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.



by 12 prominent breeders to the Western Washington Holstein Breeders' Sale, at Snohomish, on May 3rd and 4th, 1916, are a large number of animals of exceptional breeding and big records.

E. B. Marks of North Yakima, has listed 22 head which includes the young bull "Chief Fobes" a son of Mutual Fobes Longfield DeKol, and Bonnie Echo DeKol 2d, 29.49-lbs. butter, and her best days milk 103.4 lbs. He was born on Nov. 15th, 1914, and in color is mostly white. Of him Mr. Marks says, "He is a show bull all over, and I hope to see him go to a good herd. I studied sometime before consigning this fellow, for I have been using him on some of my best cows and do not like to part with him. He is just as good as his breeding stands for and then some." The other bull in the Marks list is "Model Mona Segis," born Oct. 24th, 1914, dam Mona Ormsby, a 22.7 lb. daughter of Allie Mona DeKol 2d who has a 26-lb. record, and is the dam of 3 A. R. O. daughters. This bull is sired by Model Annie DeKol Segis, a son of a 30.92-lb. dam, who is the daughter of the 31.47-lb. Annie DeKol Butter Girl. Among the heifers consigned by Mr. Marks are 7 daughters of Mutual Fobes Longfield DeKol, all with A. R. O. dams, and among them is a first prize senior yearling. Six of the lot are in milk. Among the remaining 13 head we find, Cornucopia Korndyke DeKol Model, at 3 years old 18.9-lbs. butter. Lucy Longfield, a 20-1-lb. daughter of 19-lb. dam, Pauline Ophelia, a 17-lb. 3-year-old out of a 29-lb. dam. Reka Segis, a 17-lb. 3-year-old from a 21-lb. dam who has a 675-lb. semi-official yearly record. Claradona Kakaensthe DeKol 21.1-lb. at 4-years. Lady Ormsby Kakenstine 18-lb. at 3 years, and a number of youngsters not yet tested. Most of the cows and heifers of breeding age are in calf to Mutual Fobes Longfield DeKol. Of his consignment, Mr. Marks says, "They are all extra straight, nice young animals, not a blemish in the lot, and in looking them over you will see that they are the kind we like to keep, but the buyers want that kind also."

Herman Steffen of Monroe, writes, "We have consigned 16 head of the finest cattle, we believe to be found in the west, and the equal of any catalogued for this sale. Jewel of Chimacum is a cow of the finest type with a record of 18.76-lbs butter in 7 days, and Gerben Korndyke Beauty, who at 1 year 11 months made 13.86-lbs butter are but samples of what we have entered. We also have a daughter of King Ormsby who at 3 years made over 18-lbs., and her yearling, both of whom would be a credit to anybody's herd I wish to lay stress on the creditable records of these, all made under very ordinary circumstances. I have also entered Kate Waldorf Girl, a daughter of Kate Waldorf 2d, 18.25-lbs butter. This heifer is now ready to go on test and I think she will make a very good showing. We also have a daughter of a 21.6-lb. cow and her yearling heifer. A daughter of a 21.7-lb. cow due to freshen in August, and a yearling daughter of a 16-lb. 3-year-old. This will show the class of females that go to make up our consignment. I wish to call special attention to the bulls we are sending. They are all sired by a good son of Sir Johanna Ruth Fayne, whose dam has three A. R. O. daughters, 25.4-lb., 24.8-lb., 19.8-lb. One of these youngsters is out of a 21.9-lb. heifer as a 2-year-old, another from a 22.2-lb. 3-year-old whose dam made 21.6-lbs. We also have a son of a 21.6-lb. cow who has a 22.2-lb. 3-year-old. Also the son of Katie Waldorf 2d who made 18.24-lbs. in 7 days. I firmly believe that it would be hard to duplicate our consignment, and I feel that they will make pleased purchasers wherever they go."

Wm. Bishop, Chimacum, has this to say of his cattle. "Our consignment consists of 2 bulls and 13 females. One bull, Sir Chimacum Wayne Cornucopia, will be nearly a year old at the time. This young fellow is a good individual as the award of first prize junior calf at the Cascade International Stock Show at North Yakima last fall will attest. He is also one of the two to win

second on produce of cow at the same show. At the Panama Pacific he had this same honor conferred, and was one of 4 to win first as get of sire. The records of his dam, sires dam, and sires grand-dam average for three milkings in one day 121.9 lbs. for 7 days 814.7 lbs., and butter for 7 days 30.7 lbs.. Milk for 30 days 3294.6 lbs. (worlds record) and 125 lbs. of butter. His dam Lutscke Vale Concordia is the second cow in the World to average over 100 lbs. of milk a day for 180 days. In 8 months she has to her credit 22,530 lbs. of milk and 700 lbs. of butter. Another bull ready for service is a son Violet Blossom Sir Fayne whose dam has a yearly record of 924.47 lbs. butter. The dam of this bull is a three-quarter sister to Lutscke Vale Concordia. She has a record made 32 days after calving of 598.2 lbs. milk and 23.96 lbs. butter. She is in yearly test and during the month of December made 105 lbs. butter, her best days milk being 95.7 lbs. The oldest cow in our herd is a 5-year-old with a record of 19.7 lbs. She is a very persistent milker. Four other heifers with first and second calves that have made very creditable records. The rest are heifers under one year old and are a very fine lot."

Greenbank Farm's consignment numbers 50 head of the best of their herd. Among the lot are two cows with yearly records of over 800 lbs. of butter and 20,000 lbs. of milk. Two young daughters of a 27-lb. daughter of DeKol Burke, and sired by King Korndyke Pietertje Pontiac, the only son of King of the Pontiac in the Northwest. The two grand-sires of these heifers have between them 18 thirty pound daughters and 247 in the A. R. O. list. There are also a number of yearling daughters of King Korndyke Pietertje Pontiac and Ayacanora's Johanna DeKol out of cows with large 7 and 365 day records. A heifer deserving special mention is the 9 months old daughter of Ayacanora's Johanna DeKol and K. P. Sanesta Topsy, the 23.22 lb. junior 3-year-old daughter of King of the Pontiacs, who has a junior 2-year-old semi-official yearly record of 597.95 lbs. butter. Also by the same sire, is the yearling daughter of Netherland Pansy Scholton 2d's Lass who has a semi-official yearly record of 751.80 lbs. of butter from 21,641.8 lbs. milk. The young bulls include three sons of 29 lbs. cows, sired by King Korndyke Pietertje Pontiac. A yearling son of this bull out of Allie Mona DeKol 2d. He is catalogued under the name of Greenbank's Mona Pontiac, and is an animal of exceptional dairy quality. His dam Allie Mona DeKol 2d, is one of the great producing cows of the breed, having to her credit a 7 day record of 26.41 lbs. butter; a semi-official yearly record of over 760 lbs. butter from over 18,000 lbs. milk, and she is the dam of 3 A. R. O. daughters. Her dam in turn had a 25-lb. record and 4 A. R. O. daughters. This consignment includes 20 granddaughters of King of the Pontiacs and Sir Johanna Ruth Fayne, as well as 3 daughters of the latter sire.

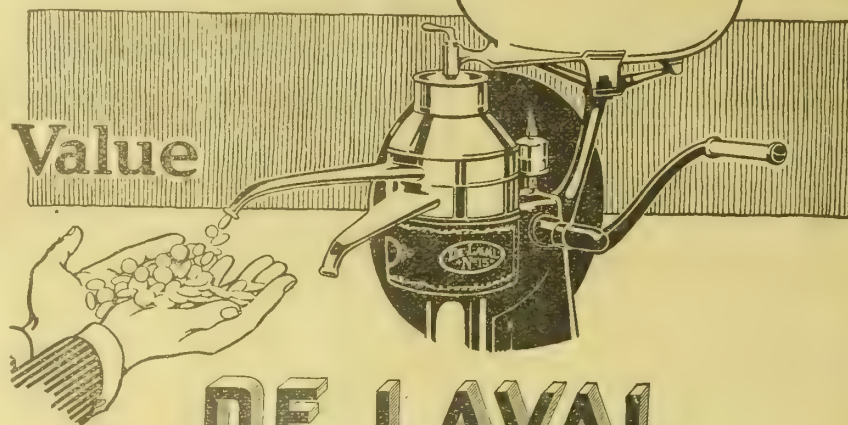
A. E. Sumas, of Sumas, will consign 2 young bulls and 11 cows, some of which are half sisters to world record cows. These are all in fine healthy condition.

We have no description of the animals composing the other consignments but we understand that they are of the same high quality as those listed above.

#### CHEHALIS COW TESTING.

Mr. Nathan Hamilton with a registered Holstein fresh March 1st, made the high mark in the Chehalis Cow Testing Association for March, her record being 2388 pounds milk, with 71.64 pounds butterfat. Other records in butterfat were: Lloyd Owen, Jersey (grade), 55.8 lbs.; Grasmere Co., Jersey, fresh December, 50.54 lbs.; Ed. Klaus, grade cow, 49.72 lbs.; Chas. E. Ray, grade cow, 48.73 lbs.; Ed. M. Moses, grade cow, 48.30 lbs.; A. Wachterbarth, grade cow, 48.24 lbs.; Ed. W. Klaus, grade cow, 47.52

It isn't what you put into a Cream Separator—but what you get out of it that counts.



## DE LAVAL Cream Separators are by far the most economical

**R**EAL economy is never short-sighted. It never confuses PRICE with VALUE.

PRICE is what you pay for an article—what you put into it.

VALUE depends upon the amount and quality of service the article gives you—what you get out of it.

You get by far the greatest VALUE for your money when you buy a De Laval—BECAUSE it will give you much better and longer SERVICE than any other separator.

From the standpoint of its greater durability alone the De Laval is the most economical cream separator to buy, and when you also take into consideration its cleaner skimming, easier running, greater capacity and less cost for repairs, the price of the "cheapest" machine on the market is most exorbitant compared with that of the De Laval.

And there is no reason why you should let its FIRST COST stand in the way either, because the De Laval may be purchased on such liberal terms that it will actually pay for itself out of its own savings.

A De Laval catalog to be had for the asking tells more fully why the De Laval is the most economical cream separator, or the nearest local De Laval agent will be glad to explain this and many other points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

## DE LAVAL SEPARATOR CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST  
We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for Special Catalog.

SAN FRANCISCO

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

#### THREE JERSEY HEIFERS

Average age fifteen months, not bred Sire and dams all in Register of Merit. All three are granddaughters of Emineah and extra good individuals. Price \$350, or will sell separately.

David C. Dilworth Buckeye, Wash.

#### STOCKMEN TUBERCULOSIS

We prevent and remove  
**IN CATTLE. DON'T DESTROY YOUR ANIMALS. RESTORE AND PROTECT THEM WITH KAR-NITUM. WRITE US NOW.**  
Kar-Ru Chemical Co., Tacoma, Wash.

#### BLACK LEG LOSSES SURELY PREVENTED

by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unsatisfactory, order direct. THE CUTTER LABORATORY, Berkeley, California.

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

#### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for Particulars

Plateau Farm  
VASHON, WASH.  
E. M. SHIPLEY, Proprietor.  
Haller Bldg. Seattle.

#### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.

Registered

#### Poland China Pigs

out of large litters from big prolific sows and a big well bred sire. Some February pigs that are fine. Prices reasonable and satisfaction guaranteed.

ROY MINTER,  
Castle Rock, Wash.



lbs.; J. C. Bush, grade cow, 47.12 lbs.; Mrs. Jessie B. Gregg, grade cow, 46.72 lbs.; F. V. Svinth, Holstein, 46.64 lbs.; J. C. Bush, grade cow, 46.39 lbs.; A. Wachterbarth, grade cow, 46.32 lbs.; Mrs. Jessie B. Gregg, grade cow, 45.10 lbs.; P. H. Thompson, grade cows, 44.55 lbs. and 44.10 lbs.

This is the first month's work of a second series in cow testing at this place, and a deeper interest is shown by all who are taking part. In a number of cases owners of cows find they have better producers than was their own estimation and on the other hand, in this association as well as with all others the test shows how few cows out of 400 or 500 produce 10 lbs. of fat or more a month, and how many of the cows kept by dairymen produce no profit. When a few cows, in each of these associations, whose high production records can be traced back on both sides yield 70 lbs. fat or more a month evidence of the value of registered stock and particularly of pure bred bulls with good records is self proof to the observing farmer.

#### Low Producers Expensive.

From records covering five years, made in several states through the office of Farm Management, United States Department of Agriculture, it was determined that 100 lbs. milk cost \$1.87 to produce when the cows yield 3000 lbs. milk or less per annum. The cost per 100 lbs. milk from cows yielding 3000 to 4000 lbs. per year was \$1.36; cows 4000 to 5000 lbs., \$1.20; cows 5000 to 6000 lbs., \$1.10; cows 6000 to 7000 lbs., 98 cents; cows yielding 7000 to 8000 lbs., 94 cents, and for cows producing 8000 lbs. milk or over a year the cost per 100 pounds was only 89 cents, or less than half as much as those giving only 3000 pounds. Why should any dairyman keep a low producer any longer than he can possibly get rid of her.

#### ST. MAWES FARM JERSEYS.

Some years ago Mr. E. F. G. Carlyon, of Bellingham, parted with his great bull, St. Mawes, his full sister, Gelatine of St. Mawes, and several other great producers, but has lately bought some of them and their progeny back, intending to raise more high producing registered Jerseys with good rugged frames for heavy dairy work. St. Mawes Lad, his present herd bull, is backed by the record of his dam, two grand dams and two of his great grand dams with an average of over 12,300 pounds butter in a year. One of the heifers in Mr. Carlyon's herd has made the register of merit record in 6 months and will finish the year's work with a high margin. Her test is running from 6.8 to 7.4 per cent.

In this herd there are no scattering pedigrees, but all are being carefully line bred. Mr. Carlyon is of the opinion that the curse of the country, in the breeding game, is blind work in crossing. Two strains a thousand miles apart bred together and often another distant strain checked in for good measure is not the skillful method that will produce the best results. There are some very choice youngsters, both heifers and bulls, now developing in this herd. It may interest breeders to know that this farm and its noted herd are named from a very beautiful place, St. Mawes, near Falmouth, England, belonging to a cousin of Mr. Carlyon.



## More Cash From The Same Cows—

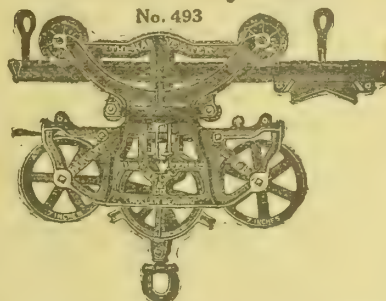
**T**IME is money and it "costs" time to take care of cows. And the profit comes from the milk they yield. So—**STAR BARN EQUIPMENT** by cutting labor cost in half, **saves** you money. And by making the animals give **more** milk, and **better** milk, it **increases** your profits. Incidentally, don't forget it offers health insurance as well. That's how **STAR BARN EQUIPMENT** gives you "more cash from the same cows."

It's about time you looked into this matter of cutting costs and raising profits in the dairy business. We'll show you **how**. And—there's no theory about things that are down in cold, hard figures on the record books of the best dairymen in America.

## STAR Steel Stalls. Stanchions and Litter Carriers

The next best thing to seeing the goods is reading our catalogues. They are free on request and well worth owning. Send for them. **STAR STEEL STALLS** are built in our factory instead of your barn—they are sold on the Unit System—the Arched Construction gives strength—the Alignment Device is simple and positive—the Star Curb Clamp enables you to finish up the curb with the rest of the concrete work. Our stalls are equipped with the wood-lined **GIANT STAR STANCHION**—it adjusts to fit all size necks—has the One Hand Lock, and the quiet Double Chain Hanging—has a Sure Stop that's automatic and is the strongest stanchion made. The biggest labor saver in the barn is the Star Litter Carrier—we have the most complete line of litter and feed carriers in this country. Roller Bearing—Double Locked Tubs and Swinging Boom to free barnyard of obstructions. Write for our catalogues today.

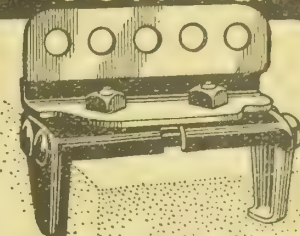
### Harvester Hay Carrier No. 493



Biggest in size and value. Roller Bearing and Built for Heavy Duty. Ask your dealer or write us for details.

DAIRY MACHINERY COMPANY, Agents, SEATTLE, WASH.

Sixty Seconds Sets A Stall



### The STAR Curb Clamp

(PATENTED)

**T**HIS device, now used on all **STAR STALLS**, marks a revolution in stall setting. Sixty seconds will set a stall—the same length of time will remove one. And you can finish up your curb right along with the rest of the concrete work without the use of templates or anchors and know that the stalls will fit when they arrive.

And the Star Curb Clamp holds a stall as Solid as a Rock.

## FREE BARN PLANS

Let us help you design your new barn or remodel your old one. Our Barn Plan Department is at your service and Blue Prints are free. Let us know your wants.

In writing, state whether interested in Stalls, Litter Carriers, Stanchions, Hay Tools or Barn Door Hangers

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## HUNT, HELM, FERRIS & CO.

28 Hunt Street

Harvard, Illinois

### CHEESEMAKING.

#### Comparative Prices with Butter-Fat; Necessary Equipment.

The prices which a cheese factory is able to pay for butter fat, in competition with other markets, can readily be estimated if the price of cheese is known. Milk makes 2.7 pounds of cheese for each pound of butter fat. The cost of manufacture is about 2 cents a pound in factories of ordinary size. Cheese at 13 cents a pound would allow the payment of 29.7 cents a pound of butter fat; at 14 cents for cheese, 32.4 cents for fat; at 15 cents for cheese, 35.1 for fat; and at 16 for cheese, 37.8 would be paid for butter fat. During the

### THE MARGARINE PROBLEM.

For a number of years the officers of the National Dairy Union, in consultation with others, have labored industriously and conscientiously to have the present oleo law amended, not to weaken it but to strengthen it, to make it just and fair to the Oleo interests, to prevent fraud and to protect the dairy interest and consumer against imposition. In preparing and presenting such a bill, with the prevailing misconception of the purpose of the 10 cent tax, it was decided not to insist upon the 10 cent tax, but to prescribe and insist upon a color standard, 70 per cent white, beyond which Oleo cannot go, except when colored for one's own family table, which is in line with the laws of the state of Pennsylvania and of Denmark and made possible by a practical means for scientifically measuring color, recently worked out by the National Bureau of Standards.

The bill introduced provides that the name of oleomargarine shall be changed to margarine, that it shall be sold in ½, 1 or 5-pound packages properly marked, wrapped and branded, that books shall be kept in such form as is prescribed and open to inspection, that a strip stamp shall be wrapped around each wrapper instead of the coupon stamp now used, for a flat tax of 1 cent per pound on all margarine, for special taxes on manufacturers, wholesalers and retailers, that the sale of margarine shall be subject to the laws of the state and shall not be exempt therefrom by reason of being introduced in the original packages or otherwise, and for heavy penalties for violations of the law.

This bill is H. R. 13825, introduced by Mr. Houghan at the request of the National Dairy Union. It was prepared by men of experience and talent, with the aim to make it just and fair to all concerned. It is endorsed



past summer great quantities of cheese were sold in the Rock Mountain States at a price higher than 16 cents a pound, while probably none brought less than 13 cents.

In certain localities, some farmers not familiar with cheese factories are inclined to oppose the industry because it uses skimmed milk formerly available for calves and hogs. This opposition is not well founded, as nearly every farmer in the great cheese factory district of Sheboygan County, Wis., is able to raise excellent dairy cows, according to the U. S. Agricultural Department. Experiments by the New Mexico experiment station have demonstrated that where alfalfa pasture is available and corn is worth 80 cents a bushel, a hundredweight of skimmed milk is worth only 14 cents, as compared to nearly 30 cents where there is no alfalfa. It is probable that, with pigs on alfalfa pasture, they would give almost as great gains as would skimmed milk.

In the flush of the season a cheese factory can be operated economically on 3,500 pounds of milk, or the product of about 200 cows. This milk should be produced within 4 miles of the factory, as a longer haul is not economical and increases the danger of bad milk and poor cheese. A cheese factory to handle 5,000 pounds of milk can be built for about \$1,500, including equipment.

### MONTESANO COWS.

Testing Association Work February. By R. W. McKenna, Montesano, Wash.

The high mark cow was Mr. E. L. Brewer's Jersey Emanon's Annie West, producing 68.9 lbs. butter fat. The next was also one of Brewer's pure breds, Queen's Golden Pogus, with 59.56 lbs. fat in 28 days. Following these were Murphy Bros., one cow, 58.8 butter fat, another 55.4 lbs. Oscar Smith's cow, 55.1 lbs.; J. H. Taylor 1 cow, 53.8 lbs.; A. P. Stockwell, Ayrshire, 47.4 lbs.; A. H. Arland Jersey, 45.7 lbs.; G. C. Collet grade, 44.5 lbs.; Parker Askew grade, 44 lbs.; J. B. Gonchnour grade, 42.3.

### Abundant Feed Important.

Commenting on the work Mr. Monroe states:

So much more feed was required for maintenance than common that it was almost impossible to obtain the maximum flow of milk except where large quantities of feed were at hand. As it is becoming more generally known, large quantities of milk cannot be produced on small amounts of feed, and the cow will keep warm whether she gives us any milk or not. Consequently, the cows which were getting barely enough for maintenance through the severe weather could hardly be expected to give a good flow of milk. The best of these cows would have produced milk and butterfat at a profit, had they had enough feed over and above the maintenance requirement to do so.

The dairymen who had plenty of good silage, this year, not only had their cows up to a good flow of milk, but also got added value from their hay and fodder. It has been found impossible to obtain a satisfactory flow of milk without feeds rich in protein. The silo furnishes these feeds, thus saving many thousands of dollars which would otherwise go to purchase them on the market.

### JERSEYS HIGH AVERAGE.

In spite of the big influx of tests, the average milk, fat and percentage of fat from Jerseys has steadily increased.

On February 2, 1914, 2720 year records had been accepted. These records were made by 1015 two-year-olds, 516 three-year-olds, 299 four-year-olds and 890 mature cows, and the average of all tests was 7,673 lbs. milk and 481 lbs. 85 per cent butter, with an average of 5.33 per cent fat.

February, 1915, found the average of 3,708 tests of all ages, 7,774 lbs. of milk, 487 lbs. of butter. These 1,006 additional records show increased averages of 101 lbs. milk and 6 lbs. butter.

### Washington Heifer Makes Big Record.

Amateur Amy 285973, the Jersey two-year-old senior, owned by Mr. J. R. Martin, of Satsop, Washington, has completed a very creditable year's record.

By producing 10,865.7 lbs. of milk, containing 593.54 lbs. of fat, Amateur Amy becomes the leading two-year-old in the State of Washington. "Amy's" record places her fourth in Class 3 (cows two and one-half and under three years of age) in the Register of Merit of The American Jersey Cattle Club. This is another striking example of the highly profitable, productive quality of Northwestern Jerseys and should increase their popularity on dairy farms in Amateur Amy's neighborhood.

Amateur Amy is by Gertie's Son of Washington 83799, out of Amy of Rockland 242389, and was bred by her present owner.—A. J. C. Club, West 23rd Street, New York City.

### A CORRECTION.

In the March issue, page 68, the inscription under the illustration of Smith's Holstein cow Bonnie Lass Pauline, gave her record at 133 lbs. butter in "seven days," which was intended to read "thirty days."

### PACIFIC COAST COW MAKES WORLD'S RECORD.

Again a yearly world's record is broken by a Pacific Coast cow; this time by the wonderful junior 4-year-old cow, Forward Somerset Duchess 167221, who, according to the Holstein-Friesian Record, holds no less than three world's records, all made during one lactation period.

Forward Somerset Duchess freshened on January 21, 1915, at the age of 4 years, 10 days, and made a 7-day record of 28,308 lbs. butter from 725.4 lbs. milk; for 30 days she gave 106,510 lbs. butter from 2840.1 lbs. milk; her milk production for both 7 and 30 days being world's records. She was then continued on official test for one year, being the second cow of the breed in the United States to be tested officially for an entire year. Eight months after calving, in August, 1915, her production was 18,597 lbs. butter from 493.8 lbs. milk in 7 days.

On January 28, 1916, Forward Somerset Duchess closed her year's official test with a total production of 1,016,805 lbs. butter from 28,556.1 lbs. milk making a wonderful world's milk record as a junior 4-year-old, increasing the former world's record (which has been held by Milanhurst America DeKol) by 1956.1 lbs.

Forward Somerset Duchess is by Forward Prince Cornucopia, a grandson of Aaggie Cornucopia Johanna

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

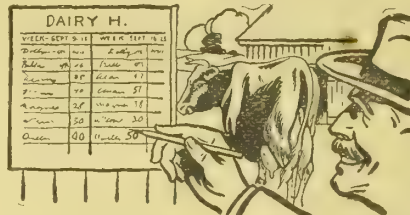
TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

PACIFIC COLD STORAGE CO.  
N. P. Wharf, Tacoma, Wash.



### A Jump in Her Record

Most every herd has one or more cows that seem sluggish and low in yield without any apparent reason. In many cases this may be due to some vital organ becoming overworked. Proper treatment is needed to build up the system and fortify the cow against serious disease.

If you have such a cow, buy a package of Kow-Kure from your feed dealer or druggist and use according to directions. You'll be surprised at the difference it makes in her general health and milk yield. Kow-Kure is especially recommended as a preventive and cure for Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches and Retained after birth.

Write for free Treatise, "The Home Cow Doctor."

DAIRY ASSOCIATION CO.  
Lyndonville, Vt.



KOW-KURE AND DAIRY ASSOCIATION REMEDIES are distributed in Washington and Oregon by Portland Seed Company, Portland, Oregon, and in California by Germain Seed and Plant Co., Los Angeles, Calif.

### Only \$2 Down One Year to Pay!

**\$24** Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 51-2 shown here. Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO. (12)  
2187 Marshall Blvd. CHICAGO No. 516



Sews Leather Quick

### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,

Box 56

Underwood, Wash.

### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE  
North Yakima, Wash.



### The Giant Of The Dairy

#### Grade up with a Jersey Bull!

He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

Write for it now.

The American Jersey Cattle Club  
370 West 23rd Street - New York City

### RIDGEVIEW FARM

#### DUROC JERSEY HOGS

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

## KOVERALLS

Reg. U.S. Pat. Off.

### Keep Kids Kleen

The most practical, healthful, playtime garments ever invented for children 1 to 8 years of age. Made in one piece with drop back. Easily slipped on or off. Easily washed. No tight elastic bands to stop circulation. Made in blue denim, and blue and white hickory stripes for all the year round. Also lighter weight, fast-color material in dark blue, cadet blue, tan or dark red for summer wear, all appropriately trimmed with fast-color galatea. Made in Dutch neck with elbow sleeves and high neck and long sleeves.



#### 75c the suit

If your dealer cannot supply you, we will send them, charges prepaid on receipt of price, 75c each.

A New **FREE** if They Rip  
Beware of Imitations. Look for the Two Horses on the Label.

Made by  
Levi Strauss & Co., San Francisco  
Awarded GRAND PRIZE at the P.P.I.E.

### Berkshire Pigs For Sale

Sired by the celebrated boar Laurel Champion Farrow Dec. 1915 Extra choice and guaranteed.

Write for Prices

Avalon Stock Farm

Docketon, Wash.



Lad. She is out of Somerset Schuiling, who has a record of 24,025 lbs. butter in 7 days.

Forward Somerset Duchess is owned by the Carnation Stock Farms, Seattle, Washington, and was bred by A. P. Warren, Elizabeth, Pa.

#### CARNATION HOLSTEINS.

On the Carnation Farm at Tolt, are now 300 pure bred Holsteins and this herd is headed by the sires Ollie Johanna, Sir Fayne and Dutchland Gove Sir Colantha. Their eastern herd has 275 pure bred and that herd is headed by Johanna McKinley Segis, whose dam has a record of 40.096 pounds butter in 7 days.

#### THE BURT PEASE SALE OF REGISTERED JERSEYS.

Considering the general depressed conditions prevailing the public sale by Mr. Burt Pease, Ellensburg, of his famous registered Jerseys, was a decided success. Fifty head, including cows, bulls and calves, brought \$9,430, or an average of \$188.60. A large proportion of these were young heifers and calves, which generally brought good prices. The young bull calves also brought fair values, but the herd bulls ought to have been sold for better prices. One was from imported stock and his small frame did not suit intending buyers, the other, though valuable by test, was rather well along in years.

The Grasmere Company, of Chehalis, bought 5 cows and heifers, Flossie Massie Polo, for \$225; Cowslip's Pretty Maid (heifer) for \$125; Rosaires Brunnette (heifer) for \$210 and Rosaires Beckie for \$290 and Counters Athena for \$250.

The top sale was Rosaire's Olga Maiden to Mr. Edwin Pettitt Dungeness for \$480. This young cow has won both state fair and national honors, Mr. Pettit also bought two heifers Cowslips Gertie for \$140 and Cowslips Saucy Lass for \$135.

Mr. Ed Cary, of Carlton, Oregon, a leading breeder bought five Waltz's Countess (cow) for \$275, Rosaire's Princess (cow) for \$300, Belles Cornelia cow for \$250, Rosaire's Gelatine for \$305 and Poppies Maiden for \$400.

Mr. E. L. Brewer bought five Brown Lads Golden Beauty (heifer) for \$170; Lillie White Snowdrop (cow) for \$225; Baby Buff's Fill Pail (cow) for \$280, Baby Buff's Adelaide (cow) for \$215 and Queen Buffie's Electro for \$280.

Mr. Otto Tamm, Enumclaw, bought the cow Bonnie Alberta for \$225, and a bull calf for \$50.

Mr. R. G. Montgomery, Enumclaw, bought Gertie's Lads Melinda for \$250 and the bull calf, Rosaire's Noble Oxford for \$100.

Mr. E. H. Hueber, North Yakima, bought the cow Miss Muriel Olga, for \$290.

Mr. Will Dunford, Ellensburg, bought Governor's Marigold's Marea (cow) for \$215, Loretta D's Queen (cow) for \$200, Brown Lad's Butter Cup (heifer) for \$180, and Brown Lads Blossom' heifer for \$185.

Grant Nichols, of Ellensburg, bought the heifer calf, Cowslips Callie, for \$150, heifer Loretta's Island Queen for \$80 and the heifer Brown Lads Charlottes for \$155.

Miss Alice Danahoe, Ellensburg, bought the heifer Rieter's Evangeline, for \$100.

W. C. Hand, of Natches, bought the cow Wild Roses Violet for \$225 and

the bull calf Cowslips Foxy Grandpa for \$115.

U. Pease, Ellensburg, bought the calf Brown Lads Carnation for \$200 and the bull calf Brown Lads Signal for \$75. The others, mostly calves, went to local buyers. The cattle were all in the very prime of condition, in good flesh and well groomed. The tests of the cows carefully ascertained and recorded.

The sale was an educator to the dairymen at Ellensburg. It literally took their breath away to see good judges of Jerseys from west of the Cascades fix values and take away such choice foundation stock from Kittitas county. But they have themselves to blame. Evidently there was a lack of preparedness on the part of both the local bankers and the farmers representing the best industry of the upper Yakima valley.

Mr. Burt Pease deserves high honors for the years of his painstaking efforts and the success attained. He has been self sacrificing to the last degree in order that others might possess foundation stock of special merit for dairying.

The American Jersey Cattle Club and all breeders of Jersey cattle may refer to this sale with pride and satisfaction.

#### WORKING TOGETHER.

Chris Solid, Coupeville, is of the opinion that farmers, by getting together, could devise some method by which money could be obtained at lower rates of interest, not to exceed 4½ per cent. The problem is how to influence the farmer to organize and carry out some of the projects which could be devised for his own best interests.

#### WALLA WALLA VALLEY COW TESTING ASSOCIATION.

By O. V. Patton, County Agent.

Results of the March test for the Walla Walla Valley Cow Testing Association, just completed by Mr. Lee C. Lewis, show continued high records in spite of the shortage of feed and inclement weather.

Highland Dora Veeman, a registered Holstein, owned by the Walla Walla College, lacked but nine-tenths of a pound of equaling the record set by the best cow last month. Both these records are several pounds higher than any record reported by any cow testing association in the United States as far as can be learned.

Thirty-two cows entered the honor list in March by producing over 40 pounds of butterfat. These cows produced a total of 36,785 pounds of milk averaging 4.4 per cent and containing 1619 pounds of butterfat worth, at 30 cents a pound, \$485.79. The total cost of feed for these 32 cows was \$252.21, leaving a profit of \$233.58 or an average for each cow of \$7.30. Owing to a scarcity of feed this month, many of the cows were fed expensive grain rations, and yet the average profit per cow is a very excellent showing. In February the average profit per cow was \$8.95.

This month several cows were sold to the butcher as a result of testing, and their places taken by more profitable cows. Two purebred sires were purchased during the month and others contemplate purchasing before the end of the summer.

Following is the "Roll of Honor" list of cows producing more than 40 pounds of butterfat during March,

**Abundant Feed and Contented Cows**  
with good milking quality are necessary for profit margins. Our tested seeds produce the heavy crops.



Red Clover seed, 99 per cent pure, \$22.50 per 100 lbs. Pasture mixture seeds for dry, also mixtures for wet soils, at \$18 per 100 lbs.; 50 and 25-lb. lots same rate.

Don't run any risk. Send to us for samples of anything wanted in the seed line. Get a copy of our new catalog and select your seed corn early.

**Aabling-Boyce Seed Co.**

89 Pike St., SEATTLE, WASH.

#### KING OF MEDFIELD

Sire of

#### World's Champion Guernseys

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.

# HIDES

That's Our Business.

ALSO

#### Wool, Sheepskins, Tallow, Furs, Etc.

Prompt Returns, Honest Weights

Hides, wool and sheepskins have been selling at extremely high prices since the war started.

We advise every one to keep selling and ship regularly as there may be a sudden decline.

Prices paid here are as high as anywhere in the country and you will find low freight and express rates. On small shipments we advise using the PARCEL POST.

#### If You Have Hides Ship Them Today and Save Money

Cut out the coupon and mail to us, or better still, write us a letter for our price list and a supply of shipping tags.

**Hibbard-Stewart Co., Inc.**

1210 Western Avenue.

SEATTLE

# HIDES

Cut This Out and Check Articles Interested In

Without any expense on my part send me your price list.

Name .....

Address .....

Furs  
Wool  
Hides  
Sheepskins

Mail this to  
Hibbard-Stewart Co.,  
1210 Western Ave.,  
Seattle



with owner, breed and pounds butterfat:

|                               |      |
|-------------------------------|------|
| Walla Walla College, Holstein | 87.8 |
| Chas. Baker, Guernsey         | 68.3 |
| Walla Walla College, Holstein | 66.5 |
| Walla Walla College, Holstein | 61.2 |
| Walla Walla College, Holstein | 59.6 |
| D. O. Saunders, Durham        | 59.5 |
| Chas. Baker, Holstein         | 56.6 |
| State Penitentiary, Durham    | 53.9 |
| J. E. Jones, Jersey           | 53.8 |
| William Reser, Jersey         | 53.8 |
| Verner Brown, Guernsey        | 53.8 |
| Homer Brown, Durham           | 53.2 |
| John M. Blue, Guernsey        | 51.4 |
| Coyle Bros., Mixed            | 50.3 |
| Homer Brown, Durham           | 50.2 |
| John M. Blue, Jersey          | 49.4 |
| State Penitentiary, Holstein  | 49.0 |
| J. E. Jones, Jersey           | 47.0 |
| Walla Walla College, Holstein | 45.9 |
| Verner Brown, Guernsey        | 44.6 |
| State Penitentiary, Holstein  | 42.8 |
| Verner Brown, Guernsey        | 42.7 |
| E. C. Burlingame, Jersey      | 42.2 |
| Russel Brothers, Mixed        | 42.0 |
| State Penitentiary, Holstein  | 41.9 |
| State Penitentiary, Holstein  | 41.7 |
| John M. Blue, Jersey          | 41.7 |
| John M. Blue, Jersey          | 41.7 |
| John M. Blue, Guernsey        | 41.5 |
| R. E. Bean, Jersey            | 41.0 |
| State Penitentiary, Holstein  | 41.0 |
| Hodgen Brothers, Jersey       | 40.3 |

The first cow in the list produced 2310 pounds milk, showing this Holstein to have outstanding value as compared with others in the list. The

lowest milk record in the list was 915 pounds.

A cow at the penitentiary farm produced 88.7 pounds of butterfat for the month of February, being the best record ever made in this State by a cow in cow testing associations. The record was previously held at the Walla Walla College farm with 81.5 pounds.

The work of this association is an eye-opener to many dairymen who are now laying an excellent foundation for future profitable dairy work.

#### HIGH RECORD COWS.

P. A. Frakes, Scappoose, Oregon, who has been instrumental in starting a considerable number of dairymen on the way to prosperity, will dispose of 40 registered Holsteins before June 1st, including both sexes and all ages. Among the lot are several cows yielding from 29 to 37 lbs. butter in 7 days. The entire lot have high records back on both sides.

## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### OAK HEIGHTS POULTRY FARM.

Four acres of ground have been added to the Oak Heights Poultry Farm since last season, making now 14 acres covered with buildings, yards and 3000 White Leghorn layers.

Fifty-four hatching machines of 880 egg capacity each are employed for the output three to four thousand chicks every other day to fill the orders booked to the 4th of May. Indications in the early part of April are that sales from this plant will go above 100,000 day-old chicks this season.

The largest number sold to one party were 7200 day-old chicks, but numerous 1000-chick orders are filled and very many for 100 chicks. The demand comes from all parts of the Pacific Northwest, including a good trade in Montana where the chicks arrive in good condition after a 30-hour ride. This shows good handling on the part of the express companies, for there was cold snowy weather in Montana during recent shipments.

A part of the green feed is raised on the place for the layers, but cabbage and root crops can be obtained at from \$5 to \$7 per ton.

The entire plant is well arranged for convenience in the daily routine work, insuring a high degree of efficiency with no lost motion while attending to duties in any detail of this poultry farm.

This plant has been a success

from the start, the result of persistent, painstaking efforts on the part of the captain and Mrs. Waldwick, his efficient helpmate.

The laying fowls are all of good size, vigorous and healthful. Selection has been according to the



Entrance to Oak Heights Poultry Farm. The houses are arranged for system in handling the feed and for choring.



View from extreme east end of Oak Heights Poultry Farm looking west.

"Hogan System," combined with the greatest care at all times to select for breeders the best shaped, fastest growing and earliest laying birds. High quality standard, system in operation and efficiency in every detail have made success here possible



Captain A. Waldwick



Mrs. A. Waldwick

This building is 60x100 feet and has incubators with a total capacity of 47,000 eggs at one time. It was started in 1906 with a room 16x16, and has been enlarged three different times. At the present demand for our baby chicks the indications are that it is too small for 1917, and the fourth enlargement has become a necessity.

gage in poultry raising on a large scale could profit by a visit to a plant of this kind. There are many exceptions to standing rules and numerous details to observe in successful poultry raising which requires time and experience to attain for best results.

## White

Orpingtons  
Rocks  
Wyandottes  
Leghorns  
Pekin Ducks

**HOW ABOUT SOME NEW BLOOD** in the poultry yard. This month we are offering some fine, vigorous white Leghorn breeding cockerels of the famous Barron egg laying strain, specially priced at \$3 each. Mention this publication in ordering.

Write for Description and prices

**ROYAL WHITE FARM**

Kirkland, Wash.

Box 101, R. F. D. 1, (Near Seattle)  
Mrs. C. M. Whitman, Prop.

## Cockerels EGGS

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Write for prices.

Single setting or lots.

**FRED A. JOHNSON,**

518 35th St.

Tacoma, Wash.

## Salmon Faverolls

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

**Island Nurseries & Fruit Farm**

S. J. Harmeling & Son,  
Vashon, Wash.



**RAU'S QUALITY HATCHERY.**

The Rau Hatchery is located south of Tacoma on the Spanaway street car line, on gravelly prairie soil, an ideal location for a plant of this kind.

Mr. H. F. Rau, senior member of the firm, estimates the hatch of day-old chicks this year will reach 100,000, orders having been booked for hatches up to May.

The hatching is principally in a mammoth incubator of his own design, heated with hot water through pipes from a furnace, burning oil-gas, a combination of distillate and air, at a very low cost, and the temperature is easily kept under control. This incubator has 40 sections, each holding 500 eggs, besides a baby mammoth machine of 1600-egg capacity.

Standard bred with high laying quality has been the aim of the proprietors in the selection and breeding of their laying fowls; in other words, beauty and utility combined.

**Care of Baby Chicks.**

Mr. Rau gives the following advice: Don't feed or water chicks until they are 72 hours old. In brooding cover floor with one-half inch of clean sand; over this put one inch or more of cut straw. If using a stove, place a circle of inch mesh poultry netting, 12 inches wide, about the stove as a fence, the inside should be covered with burlap to prevent chicks getting fast. This circular fence should be about 10 feet in diameter; this prevents the chicks straying away from the source of heat until they have learned. Place your chicks within this enclosure. Suspend a thermometer from the ceiling, about two feet from the stove and about six inches from the floor. Keep the temperature so that the thermometer will register, in this position, 92 or 93 degrees of heat, for the first three or four days; then begin lowering the temperature, but always furnish enough heat that the chicks will form a circle about two feet from the stove at night. Whenever you notice them crowding about the stove it is a sure sign that you have not enough heat. Ventilate the room well, increasing amount of ventilation as the chicks grow older. After placing the chicks in the circle, darken the room, and leave the chicks until they are 72 hours old; then give them light and place water fountains about the enclosure; use tomato cans inverted into a saucer, one for each 100 chicks. For the first feed use hard boiled eggs rubbed fine with corn meal, using just enough meal to cut the eggs well; to this add equal parts of rolled oats and bran, one pint to each egg; also add one tablespoonful of fine charcoal (fresh). This feed for the first day. The second day alternate with some good grade of grain feed called Chick Starter. After the second day, feed the egg mixture about twice a day and the chick starter about three times, using the egg mixture as an in-between meal. Continue this for about a week, then discontinue the chick starter and use chick feed, also in place of the egg mixture feed a mash composed as follows: Bran, 3 parts; shorts, 1 part; ground corn, 1 part; beef scrap, ½ part; salt, 1 lb. to the 100 lbs. of mixture; if you have any toe picking, you may use 2½ lbs. of salt. When the chicks are four weeks old, begin feeding Developing Food; this is a food composed largely of grains, such as hulled oats, hulled barley and

cracked peas, and bone. Cracked wheat, corn and other grains, grass seeds, etc., are also used in this feed.

DON'T—fail to keep clean water before them at all times.

DON'T—allow chicks to pack up in the corners and against the walls; make them form a circle around the stove every night.

DON'T—fail to keep the house clean, changing the litter each week, at least, after the first two weeks.

DON'T—overfeed, keep them anxious for their meals. Get them out of doors, on the ground at a week or ten days old, depending on the weather.

**INCUBATOR EGG UNMARKET-  
ABLE.**

The mixing of eggs taken from incubators with other eggs sent to market, as the practice has grown from year to year, has tended to lower the average prices offered for spring eggs by cold storage packers, who are important buyers at this season. Spring shipments of eggs, free from incubator eggs, are of such good quality that packers do not have to go to the extra cost of candling each egg before storing it. Such eggs can be "clicked," three at a time, to detect cracks, and quality is determined by the fresh powdery look of the shell. These measures, however, will not detect eggs which have been incubated and failed to hatch and which are useless for storage purposes, because, even if not actually rotten when stored they soon become so.

**Bad Eggs Must be Denatured.**

Eggs which are adulterated may be shipped in interstate or foreign commerce for use in tanning or other technical ways without violating the provisions of the Food and Drugs Act only if they are first denatured so as to render them incapable of being used for food. Since it is impracticable to denature eggs in the shell, adulterated shell eggs must be broken out and denatured prior to shipment. The views of the Department with respect to the denaturing of eggs are stated in Bureau of Chemistry Service and Regulatory Announcements No. 7, paragraph 19, and No. 12, opinion 102.

**One of Many Kind Letters Received.**

Inclosed please find \$1.00 payment on subscription for which credit my account 3 years. A good paper and well worth the money.—A. P. INGRAM, Arletta, Wash.

Work touches many keys of endless activity. Opens the infinite and stands awestruck before the immensity of what there is to do.—Phillips Brooks.

**KRESKY BROODER STOVES  
JUBILEE INCUBATORS**

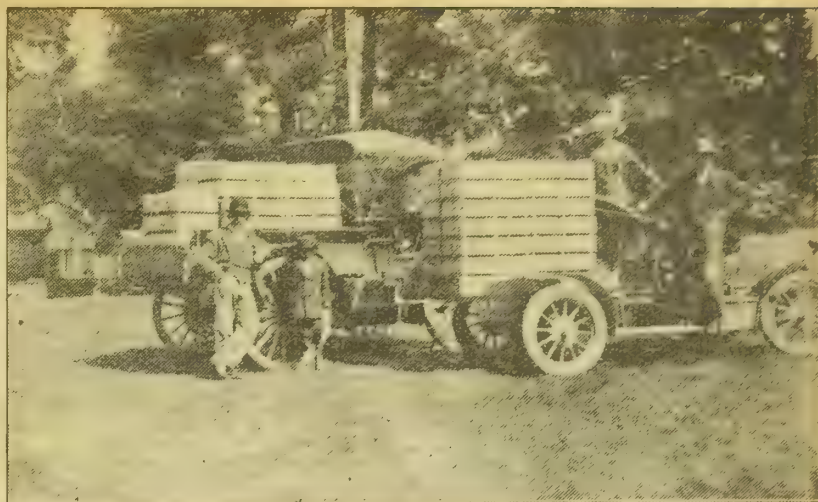
Poultry Supplies and Remedies

**DAY OLD CHICKS**

From fine laying strains of Barred Rocks, S. C. Reds and White Leghorns, and eggs by the setting or thousand. For particulars write

JOHN L. CRAIB

1022 Western Avenue, SEATTLE



5800 Day Old Chicks Being Shipped From the Rau Quality Hatchery

Think of it, Rau's Quality **\$95** PER  
40,000 MAY HATCHED **Leghorn Chicks** 1000  
\$10.00 per 100

Never has any one offered such a bargain—such Real Quality at such a low price. Every chick we hatch no matter at what price, is from the same carefully selected flocks that back the stock quality and good breeding of all QUALITY CHICKS, that has established for them a reputation of merit which has built for us the largest day-old chick trade in the Northwest. Send your order today. The first to come gets the earliest date in May.

**RAU'S QUALITY HATCHERY** Route 3, Box B-58 TACOMA, WASH.

**Diamond CHICK FOOD**

**SAVES LITTLE CHICKS** and  
helps them to grow into big, strong, healthy birds.  
A clean, wholesome, natural food—no dust—no waste.  
Keeps the chicks healthy and makes them grow fast.

Look for our Name and Trade Mark on Every Original Package

**OUR 1916 CATALOGUE**

of "Diamond Quality" POULTRY SUPPLIES listing everything necessary for the profitable production of Poultry and containing much valuable information. Mailed free on request.

**PORTLAND SEED CO.**

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Northwestern Agents "MANDY LEE" Incubators

Ask for Catalog No 25.

**Sure**

That one word sums up the advantages of buying

**UPPER'S LEGHORNS**

You're sure that they are bred true to type, SURE of their quality, SURE that they possess constitutional vigor, SURE of their productiveness and SURE of their winning and profit producing ability.

Our matings this year are the best we have ever made.

Our layers for years have been Selected by the Hogan system.

Eggs and baby chicks. Write for prices. I have pleased others—I can please you.

R. R. UPPER

Orilla, Wash.

Please mention this paper

**EGGS****Cockereils**

White Wyandottes  
and B. P. Rocks.  
Good stock. Price  
\$1.00 and \$2.50 per  
15.

Some fine young-  
sters for sale.  
Write for prices.

C. E. CORNWALL

So. 64th and Tacoma Ave.  
Tacoma, Wash.

**BABY CHICKS**

**8c** from pure bred heavy laying  
White Leghorns. Satisfaction  
and safe arrival guaranteed.  
Hatching eggs, 15 for \$1.00; 100, \$5.00.

THE QUIVIRA FARM,

Black Diamond,

Wash.



# Western Washington Holstein Breeders' Ass'n

Will Hold Its

## THIRD SEMI-ANNUAL SALE

On the  
**SNOHOMISH COUNTY FAIR GROUNDS, SNOHOMISH, WASHINGTON**  
**MAY 3 and 4, 1916**  
**159 - HOLSTEINS - 159**

**THIS WILL BE THE GREATEST HOLSTEIN SALE EVER CATALOGUED IN THE WEST**

Cows with official records up to 29 pounds. Cows with semi-official yearly records of over 900 pounds butter and 22,000 pounds milk. Heifers and young bulls by 30 pound sires and out of cows with large 7 day and yearly records, who have 3 and 4 generations of large records back of them, the among the consignments to be sold at this sale.

For superior individuality, breeding and records, nothing equal to the animals listed for this sale have ever been offered before on the Pacific Coast.

For the beginner, this sale offers an opportunity to procure foundation stock of the very highest class possible.

To the established breeder who wishes additions to his hhave 3 and 4 generations of large records back of them, are a public sale.

### CONSIGNORS

**HUGH NESBIT**, Chimacum  
**J. C. BURNAM**, Snohomish  
**P. S. GOVAN**, SEGUIM  
**J. H. HULBERT**, Mt. Vernon

**H. C. DAVIS**, Granger  
**E. B. MARKS**, North Yakima  
**WM. BISHOP**, Chimacum  
**A. E. SMITH**, Seattle

**HERMAN STEFFEN**, Monroe  
**MELBROOK FARM**, Fall City  
**GREENBANK FARM**, Greenbank  
**GEO. A. GUE**, North Yakima

**"THE BEST IN THE WEST" WILL BE SOLD AT THIS SALE**

For a copy of the catalog which will be ready for mailing April 10th, address the Secretary,

**A. B. WINTER**,  
 1515 Hewitt Ave.,  
 Everett, Wash.

**AUCTIONEERS**—Col Geo. A. Gue, North Yakima  
 Col. Harry C. Cranke, Spokane

WALTER HOGAN, JUDGE PANAMA-PACIFIC INTERNATIONAL EXPOSITION UTILITY POULTRY SHOW, offers eggs and day-old chicks from his 200 to 265 egg type S. C. W. Leghorns, as scored by

## The Call of the Hen

Would you like a few 200 to 265 egg type cockerels to improve and put new blood in your flock? Here is a chance to get them by buying eggs or chicks. You would also get some good pullets to breed to cockerels from your trap-nested stock.

Chicks are all sold up to the first of May; after that date they will be \$10.00 per 100.

Eggs are all sold up to the 10th of April; after that they will be \$5.00 per 100.

AFTER FIFTY-SEVEN YEARS OF POULTRY BREEDING, I should have the best laying strain on the Coast. MY CUSTOMERS SAY I HAVE. Address

**WALTER HOGAN**

R. F. D. 4, BOX 70, PETALUMA, CALIF.

## SEEDS

VETCH, CLOVER, TIMOTHY, SUDAN GRASS, RYE GRASS, FIELD PEAS, etc. We have a choice lot of SEED CORN, especially adapted to this climate. Your orders and inquiries will be given prompt attention.

**Tacoma Implement Co.**

1521-23 Pacific Ave.

TACOMA, WASH.

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## The Growth of your Flock Depends on Proper Food

Does the feed you throw your chickens come back two-fold into your pocket? Are your hens developing so they will bring the highest market value? Do they give the maximum of eggs?

### Albers "Progressive" CHICK DEVELOPER and SCRATCH FOOD

are scientifically compounded, and contain the necessary ingredients to produce results. Albers Progressive Poultry Feeds are made in the best equipped plants in the West. All formulas by practical poultrymen. No guess work. Every sack uniform in quality and results.

When buying Poultry Foods, ask for Albers "Progressive" Feeds. Get your flock in the best condition for your share of Poultry profits. Ask your dealer or write our nearest plant.

**ALBERS BROS. MILLING CO.**

Portland Seattle Tacoma  
 San Francisco Los Angeles



## FARM CURED MEATS

Better—Cheaper

Use your Parcels Post privileges

Also \$2.50 book on curing meats free with each \$10 order.

**W. H. KAUFMAN**, Bellingham, Wn., R. F. D. No. 2



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY AGRICULTURE STOCK HOUSEHOLD

Twenty-ninth Year TACOMA AND SEATTLE, WASH., MAY, 1916 No. 5

## FARM FACTS.

### Efficiency and Loans.

(By Xenophon Caverno, Engineer in Farm Efficiency)

Progress is a resultant of two forces. Prove all things, but hold fast that which is good. Our industrial system is building up a great radical force which needs a balance wheel. Living on the land, one's own land, is the best builder of sanity and balance in the world. The industrializing of farming by working large tracts of land with hired help, or even the general adoption of the landlord and tenant system, would change the whole course of our national development. That this is generally appreciated is shown by the almost frantic efforts of the national and state governments to promote agriculture. The result of all these efforts has been pitifully small. They may have checked the decrease in our average yield per acre, but they have scarcely started an increase, and we are still only 50 per cent efficient on the average compared with European agriculture or our own good farming. This is not chargeable to the land or to lack of available knowledge. It is due to inefficiency—inefficiency of mind, inefficiency of equipment. The great big hole in efficient equipment has been in the equipment of the farm home, the equipment for living. When the conditions of farm living are made efficient and attractive there will be plenty of efficient minded people ready to go back to the land.

### Equipment for Living.

A farm needs two types of equipment—equipment for living and equipment for operating. Efficient equipment for living comes first and should include everything that makes farm living healthful and attractive and reduces the wear on vitality to the lowest limit. Such equipment includes good houses, heating, plumbing, water supply, gas or electricity, sewage disposal, power to drive washing machines, vacuum cleaners, small separators, churns, and sewing machines, ice houses or refrigerating machines, sleeping porches, porch screens and awnings, electric fans, electric flatiron, lawns, gardens, orchards, croquet sets, tennis courts, swings, automobiles, piano, organs and phonographs. Any or all of these, and a great many more such things, may be made the basis of farm efficiency. Whatever adds to the attraction of country living, whatever promotes physical health and mental sanity; whatever reduces the wear and grind of work and saves time for better things, is just as necessary equipment as buildings, live stock, farm implements, or even

the land itself. It is not expensive, these star boarders have already been discarded from the dairy herds and a good number of pure bred sires with satisfactory ancestral records for production, have been purchased to get better producers of milk and butter in the next generation. Other associations are proceeding along the same line.

### Making Money With a Mortgage.

It pays to borrow money to buy good permanent equipment for efficient living and working. "Our trouble has been that there is not enough debt on the American farms. Contrast them with the railroads which represent an investment of \$15,000,000,000. Yet they are mortgaged up to \$11,000,000,000, or nearly 80 per cent. But this indebtedness has meant new equipment, enlarged service, increased efficiency, and more

Those employed to do the testing disseminate information about providing the feed at the lowest cost as observed from the practice of the members in the association who are most successful and thus make their

They are now being used by county agents as practical object lessons for their less successful neighbors. Under what is known as the farm-management demonstration plan, the county agent analyzes the systems that these men have adopted, compares them with the practice on farms that pay less or not at all, and learns in this way the factors that make for successful farming in a given community. He is then in a position to say: "This is the kind of farming that pays. If you don't believe me, look around you. It's not a theory; it's a fact."

The demonstrations of this kind that the Department of Agriculture, co-operating with the State colleges of agriculture has made already, afford some striking instances of the difference in results between good and bad farm management. Recently 64 groups of farms in 19 States were studied in order to ascertain what the farmer obtained for his years work after deducting the interest at 5 per cent. on the value of his farm and other capital—in other words, to find out his labor income or wages. In each of these groups, which included altogether, 4,400 farms, the conditions were reasonably similar. In each group the farmers were divided into five numerically equal classes according to their labor incomes.

One fifth of the entire number who did best had a labor income of \$1421. This implied preparedness and efficiency in every detail of the farming operations.

About three-fifths of the entire number of farmers had a labor income of \$642 while one fifth of the 4,400 actually lost money.

Their cows were star boarders and their farms were too small.

### WASHINGTON STATE FAIR.

The Washington State Fair, North Yakima, Wash., claims dates September 18 to 23. Live stock as usual will be a prominent feature, also the machinery, agricultural and horticultural products will all be worth coming a long way to see. Secretary Frank Meredith is making splendid progress in the promotion of this fair which ought to be well attended.

### WESTERN WASHINGTON FAIR.

The Western Washington Fair will be held a little earlier than usual this year. Dates chaired are September 12 to 17, the change being made in anticipation for more favorable weather than has prevailed two weeks later for the past several years. Secretary J. P. Nevins has taken up the duties pertaining to this office early and is bound to make the fair larger and better than ever.



The world's milk record Holstein cow, Lutscke Vale Cornucopia, which produced 31,239.2 pounds milk in one year, or a ten-gallon can of milk for every day in the year. Raised and owned by Wm. Bishop, Chimacum, Wash. [See page 114.]

income. Our farms are worth approximately \$40,000,000,00, and carry debt burdens of barely \$6,000,000,000, or 15 per cent. With a large mortgage load they would have a bigger producing power if the money were wisely spent. Our mortgaged farms are more valuable than the unmortgaged. Their average of acreage under cultivation is greater, their yield larger, their equipment better, and their assessment higher."

### INFLUENCE OF TESTING ASSOCIATIONS.

The several cow testing associations now operating in the Pacific Northwest are doing splendid service for dairymen. The owners of more than 2500 cows have discovered that about 90 per cent of their milkers are below the standard fixed as highly satisfactory and profitable, which requires 40 pounds fat per month or about 1½ lbs fat per day. In other words the largest part of their cows are giving short measure as an equivalent for the feed and care bestowed. In the Walla Walla Valley Association ten per cent of

suggestions adaptable to the particular dairymen who can profit from this knowledge.

The work of these associations is leading to a better system of co-operation in the communities. The way is being paved for more co-operation creameries and for a higher standard quality of cream and butter.

When fully organized according to the needs of any locality the dairymen are then in better position to command the highest market prices for their products and to buy nearer the wholesale price any goods for which they are in the market.

The testing associations are doing much to pave the way for a higher measure of prosperity for the dairymen of the Pacific Northwest and the number should be increased as fast as groups of dairymen can be organized for the purpose.

### FARMS THAT PAY.

#### Why Others Do Not.

In every community there are a certain number of farmers who have found out for themselves how to make a good profit from their farms.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

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## FRUITS AND MARKET.

The national and the state pure food laws have been of inestimable value to the fruit growers of the coast section. The markets are developing with wonderful rapidity for the unfermented juices of the logan berry, red raspberry and the grape. To standardize these as to quality and size of package and sell through regular channels at prices satisfactory both to producers and consumers is the problem. Can the logan-berry, red raspberry, strawberry and grape growers press out sufficient number of gallons juice per acre and put it in standard form with sufficient profit margin to over cost of sale and further advertising then a tremendous industry is assured. It is worth while to figure very carefully, and to get in close touch with every detail requirement of the business of selling these juices. Watch for every opportunity to standardize a finished article, make the product attractive, then allow sufficient margin for those engaged in the sale to develop new markets.

Italian prunes are now pitted and canned in about ten per cent syrup put out under an Oregon brand, a standard article said to be moving well in the market. A few years ago it was the custom to use a 40 per cent syrup with prunes. A better article is now put up at less expense. The same principle applies to other fruits and to juices. The chemists and processors have discovered that the simple matter of sterilizing the containers the second time at from 24 to 36 hours after the first, that the bacteria developing ferments is under better control than if more sugar had been used and sterilizing but once. The same principle applied to the different berry juices. These products can be condensed boiled down if need be and a much less proportion of sugar used in preservation than was formerly considered necessary and was the general practice.

## OYSTER SHELL SCALE.

The oyster shell scale is becoming quite prevalent in the Coast Section of Washington. The most effective

work in spraying for this insect has been done in May to the early part of June, when the insects are newly hatched and tender. Use either a diluted formula of Bordeaux or lime sulphur, or tobacco (picotone) or Carco. Any of these remedies properly diluted and thoroughly applied will be more effective now than during the dormant season.

## RURAL CREDIT BANKING.

The New York Chamber of Commerce is sending out information regarding its views on rural credit banking.

While in that state is the headquarters for commercial banking it is of interest to know the position of that representative business organization with reference to a vital problem of the great rural industry on which all cities are more or less dependent.

This commercial body figures that as a branch of national industry, agriculture must compete with manufacturing, transportation, commerce and trade for the available supply of credit resources. Because farming interests labor under the handicap of having to pay more for their capital in the development of rural resources than other enterprises pay. This inequality of condition is to no small extent responsible for the tendency to abandon the cultivation of the soil and to crowd into cities causing one of the menaces of the age. The Chamber of Commerce of New York therefore favors agricultural banking as a distinct field for the employment of capital and credit and suggests that legislation shall be subject to the conservative guidance and control of federal authority. But the Chamber is opposed to any method of agricultural banking which requires the use of government funds or the use of any postal savings deposits in any rural banking project as a class.

This Commercial body evidently takes the view that when a proper frame work for rural credit banking has been instituted that it should be open to attract investors who want good rural security whether private individuals, companies or any funds for which the government seeks investments on a par with other branches of industry. The aim is to serve a needed purpose at the same time preserve independence for the rural field as is the case in commerce and manufacture.

## SCIENTIFIC HONORS FOR MR. J. W. CLISE.

Mr. J. W. Clise, the famous breeder of Ayrshire cattle, of Seattle, has been honored by the regents of the State College, Pullman, Washington, with the degree of Master of Science in Agriculture, in recognition of his long service and accomplishments in the cause of scientific agriculture and stock breeding. The influence of the high class productions by Mr. Clise is far reaching and will benefit a great many people in the present and future generations.

## ABNORMAL CONDITIONS.

The Carstens Packing Company of Tacoma and other buyers are complaining about the condition in which live stock is being put on the market—unfitted. They infer that farmers sell their feed and then offer the hides and bones in living form. No doubt there is cause for

such accusation.

Live stock prices are tip-top and there ought to be more preparedness in growing larger forage crops in proportion to the live stock which is raised. In the coast section the fall sown wheat, vetch or oat-vetch for spring silage, then corn for fall silage will do much to solve the feed problem, while east of the Cascade range alfalfa and corn are the unsurpassed field crops. Feeders who are most successful plan to keep the young stock growing and in good order, turning it off at as early age as possible. Every pound of gain in rounding off up to excellent condition means a better price. By planning ahead a little farmers can soon get beyond these abnormal conditions.

## Marketing Fruit By-products

Preparations or Drying and Juice Making of Surplus Fruits. (By the Northwest By-Products Board.)

The enduring prosperity of the Northwest apple industry depends upon the systematic development of all avenues of marketing. This includes everything from making cider and vinegar out of culls to marketing the highest classes of apples in fancy packages. One large necessity of the situation is that we follow the lead of the apple growers of New York and California, who have made a distinct success of marketing a large part of their tree fruits in evaporated form. We must develop an evaporated apple business to provide for better grades of the culls, and for many of the apples now sold in the "C" grade. No industry can make money where each year it fails to sell a large percentage of its product. Quantities of the "C" grade apples must be evaporated in order that the pressure on the market in heavy crop years may not demoralize prices for the fancy and extra fancy grades.

The immense new acreage coming into bearing and the consequent pressure on the market will awaken growers to the importance of the evaporating industry, and the next three or four years will certainly see the building of great numbers of plants.

This wholesale going into a new industry is likely to result in building many unsuitable plants and much waste of money. There is also grave danger that the industry itself will receive a serious setback by reason of the large amount of poor quality, poorly graded fruit put upon the market and the indiscriminate competition between plants new to the business.

To help the fruit growers of the Northwest intelligently to meet this situation the By-Products Board, which consists of W. H. Paulhamus, chairman, Puyallup, Wash.; Truman Butler, Hood River, Ore.; M. J. Higley, Payette, Idaho; J. A. Westerlund, Medford, Ore.; J. L. Hughes, North Yakima, Wash.; Frank Reeves, Wenatchee, Wash.; H. M. Sloan, Florence, Mont.; D. A. Snyder, Dayton, Ore.; Paul H. Weyrauch, Walla Walla, Wash.; Gordon C. Corbaley, secretary, Spokane, Wash., has been giving this matter careful attention.

More than twelve months ago a request was made to Dr. Ira D. Cardiff, director of the Washington Experiment Station at Pullman, to secure

## KEEP SHEEP.

Sheep tread with a golden hoof. Ten sheep make a good showing. Sheep will clean up the weeds and pay a good profit thereon.

An ordinary sheep will give you \$5 a year in cash and leave a bonus on the ground in the shape of fertilizer.

The wool of a sheep should pay for its keep.

Ten sheep will pay as much in a year as one cow, without the daily chores.

Sheep—the key to successful farming.

Sheep—the farmers safe anchor. A good sheep farmer is generally a good all-round farmer.

J. J. FOX.

the assistance of the college in meeting this problem. Acting upon this suggestion, the State College selected Dr. J. S. Caldwell to make a complete survey of the evaporating business and generally assist in establishing this territory in a common-sense way.

It has been the desire of the By-Products Committee to protect the growers from investing in impractical evaporating plants, or too expensive evaporating plants. The apple industry could not be greatly assisted if it was necessary to sell at 5c a pound a product that had cost 8c a pound to produce.

Dr. Caldwell has now completed his preliminary investigations, after examining more than two hundred evaporators, and has in press a bulletin describing the construction and equipment of the well-known types.

We recommend this bulletin to the growers of the North Pacific States, and suggest especially to the growers of Washington that they take advantage of the expert services of Dr. Caldwell in planning and constructing their evaporators.

## Style of Apple Evaporators.

Your Board recommends that no individual evaporating plants be constructed by individual fruit growers along the "stack plan. Experience has shown that these plants generally produce a poor quality of fruit at a high cost of operation. The grower has no dependable market for his fruit, and will seldom receive as good a return for his apples as if he had sold them to an evaporator or put them through a co-operative plant.

Evaporating plants in the Northwest States should be built by growers having large quantities of fruit, by fruit growers associations, by neighborhood groups of growers or by individuals to serve neighborhoods. No plant should be undertaken that does not plan its buildings and equipment with the idea of an ultimate daily capacity of not less than 600 bushels of apples. Experience has shown that plants with a total capacity smaller than this size are not truly economical, although all plants should be arranged in units to permit parts of the capacity to be operated.

The Board recommends to the attention of the fruit growers three types of evaporators:

Kiln Evaporators: Constructed on the plan of the old style hop kiln—suitable for evaporating apples, but not well designed for any other fruit



or vegetable. In general use in Western New York, because it evaporated apples at slightly less cost than other types. A 600-bushel capacity plant can be built at a cost of \$3,500 to \$4,000, depending on the material costs in the district.

**Tunnel Evaporator:** Where the fruit is placed on trays and is treated by the heat during its progress through tunnels. The type of evaporator best suited for evaporating prunes, but can be used for apples and other products by the use of fans and a forced draft. Will cost in excess of \$4,000 to build a 600-bushel plant in the Northwest, but should not exceed \$5,000. Smaller size in approximate proportion.

**Uniform Heat or Snyder Type of Evaporators:** Where the fruit is handled on trays, but the heat is applied uniformly throughout the compartment by passing up from below. The "all purpose" evaporator that can be used for apples and any other product. Will cost less than 1/4c per pound more to produce evaporated apples than the kiln type and makes better apples. Cost of construction approximately the same as tunnel type.

#### High Grade Quality.

The committee wishes to particularly impress upon our growers the desirability of constructing a type of plant that will produce a high-grade product even at a trifle greater cost. The grower must bear in mind that the man who is now purchasing New York or California evaporated apples is not going to buy our product unless we can offer him a better product for approximately the same price. We are therefore strongly inclined to urge the construction of types of evaporators that dry the fruit on trays, because of the finer quality of fruit produced. We believe that our experience with evaporated fruit in this respect will be somewhat similar to our experience with fresh fruit—we must win the markets by offering the best product.

By the use of any of these types of evaporators 100 pounds of apples will produce approximately 13 pounds of evaporated fruit.

The Board sees a great danger in the number of plants that will probably be constructed, with an uncertain quality of product, produced with little knowledge of costs. This condition will flood and break the market unless carefully guarded against.

The first essential in meeting this situation is the establishment of a uniform standard of quality. For that purpose we are preparing uniform rules for evaporating apples, covering the percentage of moisture and providing grades for packing.

Because of the distance from export and the big central markets of the United States we must, in building the evaporated apple business, depend upon the same high quality and dependable pack that has made a market for our boxed apples. In order to bring that about we urge upon all existing plants, and all new plants, the importance of co-operating with us in establishing this uniform quality. Especially do we urge upon fruit growers and commercial organizations the immediate passing of legislation in the four Northwestern States that will legally establish these uniform rules.

#### Co-Operation and Sales Agency.

The second essential of the situation is to bring about a co-operative

marketing that will prevent the demoralization of the markets of the Northwest and Alaska and that will provide for a systematic development of outside markets at a rate fast enough to sell our increasing product at a profit.

To meet this situation your Board announces its purpose to organize an evaporated apple sales agency to undertake the marketing of all evaporated apples produced in the North Pacific States, for the purpose of preventing demoralizing competition and to develop markets.

Your Board announces its purpose to place the sales service of this agency upon a uniform basis of a charge of 5 per cent of the sale price of the apples. This charge to include payment to brokers. In the beginning such a charge will mean a large deficit, but we believe that the fruit growers and commercial organizations of the Northwest will recognize the importance and will financially support the work of this Board.

In order to help neighborhoods and communities go into the evaporated apple business upon the best and most economical basis this Board offers its services in investigating local situations and in planning the construction and operation of new plants, reserving this offer to such communities as will enter into a broad understanding of this entire situation, including the establishment of the necessity of co-operatively marketing all of the product, in order to maintain satisfactory markets.

The general services of the committee will be rendered to any community without charge other than the actual expense of visiting the community.

This statement is confined to the evaporated apple business, because that seems to present the greatest emergency.

#### STRAWBERRY ACREAGE.

The strawberry acreage in the United States is 111,543, about 20 per cent more than last year. In Washington and California there is a decrease, but in Oregon an increase, so the commercial marketable crop is likely to be about the same as that of last year on the coast.

#### NATIONAL FLOWER SHOW AWARD.

The Gold Medal Award at the last National Flower Show held at Philadelphia was given to Mr. Henry A. Dreer. His exhibit was so meritorious that the society passed a vote of special commendation and appreciation for results achieved, surpassing that of any flower show ever held in the United States, as recorded by the Secretary, Benjamin Hammond, of Beacon, N. Y.

#### FLOWERS OF MT. TACOMA

And Rainier National Parks.

That the natural flower gardens of Mount Rainier National Park surpass in beauty of color, number of species and luxuriance of growth, those in any other alpine region of the world, is a statement made by J. B. Flett, in a pamphlet entitled "Features of the Flora of Mount Rainier National Park," recently issued by the Department of the Interior. "These flower beds must be

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seen and their fragrance inhaled," says Mr. Flett, "before a full comprehension of them can be realized. The more one sees them, the more does he realize their infinite beauty and the full significance of the spiritual lessons which these floral emblems teach." This pamphlet, which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 25 cents, contains well selected and finely printed pictures of the common flowers. Among plants illustrated and discussed are the Indian Pipe or Ghost Plant, which is nowhere more at home than in the woods of Washington; the Barber's Pole, a beautiful red and white striped plant confined to the Pacific

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A BILL has recently been introduced in congress to appropriate one million dollars to purchase several thousand acres of this land for an army post and maneuvering grounds. If this bill passes the government will consolidate all the army posts of the Pacific Northwest in one big post at American Lake. ANOTHER 60 days will see a big movement in the lands south of Tacoma. If you want to take part in this activity see us without delay. We have several thousand acres that we can sell at \$25 an acre and up. When watered the yields of forage crops are heavy. Excellent opportunities for dairymen.

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Coast; the Canada Dogwood, which is known in the East as the Bunch Berry; the Anemone, which forms beautiful spots here and there; the White Rhododendron, whose creamy white flowers are conspicuous in the woods; the Twin Flower, a dainty and graceful training vine; the Squaw Grass, used by the Indians in basket making; the Avalanche Lily, which thrusts its leaves and flowers through the snow; the Valerian,

which grows in great beds of brilliant color; the Mountain Phlox, arrayed in large masses of lavender flowers, and the Heather, with its bell-shaped drooping flowers. This interesting publication recalls John Muir's statement that in the Mount Rainier National Park "specimens of the best of Nature's treasures have been lovingly gathered and arranged in simple symmetrical beauty within regular bounds."

## AGRICULTURE

### The Basis of Prosperity

#### FILLING THE SILO.

Many more farmers in the Coast Section will fill silos with a good spring forage crop than ever before. They realize that it is very poor policy to permit from a third to half of the early grown feed tonnage to be wasted by trying to cure it in the form of hay when all can be saved with greater results, in the form of silage.

For those putting up silage for the first time, a few suggestions obtained from those having had several years experience in this section, may serve to be of very material value.

A leading and successful farmer states he has siloed crops of clover to good advantage by permitting it to come nearly to maturity, that is, after it is well out in blossom and a few days before he would cut it for hay. If very sappy and wet it is left in the field a couple of days, according to the weather. When running through the cutter a little dry straw was mixed in to prevent the silage from becoming too acid. His silage was good, relished by the stock and nutritious.

Where no dry straw is available, any good hay would answer the purpose. Where the dry filler is not used it would be better to let the clover, or whatever grass crop that is siloed, come to a nearer stage of maturity before cutting. There is more loss and poor silage caused by putting in a crop too green and sappy than by having it become too ripe. In one instance a farmer cut his mixed grass crop, including a large proportion of Canada thistles, and left it in windrows for more than a week, being unable to get his silo ready in time. It was well dried out, practically in the form of hay when put into the silo. He turned in a stream of water through a hose when the silo was nearly full and to the astonishment of all observers, it made excellent feed.

The mixed vetch and wheat or vetch-rye crop sown last fall will be ready to cut in the early part of June, and those who have had experience say best results follow when the grain is in or just past the "dough" stage. As with the clover and other grass crops, better too nearly ripe than too green, for moisture can be added by turning in water, but with a crop too green and no dry filler, excessive acid will form.

Be sure the silo is tight at the bottom and around the sides and pack well while filling. Observe closely instructions given by those representing silo firms. Most of the silos in the Coast Section of Wash-

ington are factory made and generally satisfactory. In the Coast Section of Oregon some years ago a large number of cheaply home constructed silos were built, most of them leaky and unsatisfactory with the result that the silo system of preserving feed received a set back there for years. Whether silos are of home made or of factory made structures, they must be absolutely air tight and strong.

Get in touch with reputable firms offering good silo filling machinery at once. From two to four neighbors could invest in silo filling equipment to good advantage. When the crop has been cut and is ready for the silo the filling should be done rapidly, and a crew composed of neighbors co-operating can do this work to best advantage, where the farm units are small. By siloing the early forage crop the dairy herd can be kept from decreasing the milk flow during July and August, when pastures are usually short. This, together with the corn crop made into silage in October or November, will serve to keep the feed bill at the minimum until next season's pastures are again green.

#### CORN GROWING.

Be very particular about the seed. No farmer can afford to plant any seed corn which does not have a high germinating test. Get it from good acclimated stock, if possible. The champion corn grower in Washington last year plowed the land deep, harrowed it thoroughly until mellow and free from clods right after the plow.

A single shovel plow was used for furrowing the rows 3 feet apart and the seed was planted in the deeply made furrows, covering only about 2 inches at first. After the corn had sprouted the harrow was used to smoothen the surface, adding from 1 to 2 inches more of cover over the seed, at the same time destroying newly sprouted, tender weeds which appeared at the surface.

The harrowing also conserves moisture, and by level cultivation throughout the season, there is less chance for the soil to dry out than where the seed is near the surface, and when ridges are required in cultivation to cover the roots.

When the plants are four to five inches high the cultivator was used once each week until the corn tasseled.

In this plot the corn was irrigated several times during the latter part of July and August, directly after the last cultivation. The yield was 149 bushels per acre of the yellow dent variety.

## DAIRYMEN'S SUPPLIES

Any tool or implement required by the farmer dairyman, the moderate sized creamery or the larger factory we are in position to supply. And remember that our motto is Quality and Satisfaction. Our brands are tried and true. No order is too small nor too large to receive our prompt and careful attention. Our catalog gives descriptions of our goods. Be sure to have a copy for handy reference. Parcel Post carries many a needed article.

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Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

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Rose Bushes, fine assortment in two-year and three-year sizes. Berry Plants of all kinds. Send for price list.

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PUYALLUP, WASH.

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON



**SLUG-SHOT**  
USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.



As the warm weather approaches it is very important that the moisture should be under control and amply provided, as a burning hot sun and insufficient moisture during a period of two or three days may greatly reduce the yield.

#### POTASH IN MANURES.

The manures from from animals whose feed is largely grain of some kind as a rule contains a large percentage of potash; for instance horses and poultry produce a larger percentage of potash fertilizer than do cattle and sheep. By using cement tanks to conserve both liquids and solids a large amount of potash can be obtained by the farmers in the Coast Section where it is needed.

#### CANADA THISTLE.

One way to dispose of the Canada thistle is to cut the crop at the proper time, before any seed ripens and put it into the silo. Mixed with other forage for silage the cattle eat it readily.

Another method is to graze it down with sheep or cattle while the plant is small.

Constant hoeing and cutting down into the roots will overcome the pest.

Tar paper or building paper, weighing the laps down with earth, will smother it. A coat of straw or manure serves the same purpose.

In the meadows heavy seeding of various grass crops should be made, which serve to reduce its nourishment, then cut it out with a sharp hoe or scythe at frequent intervals during summer.

#### WOOD FLOUR BY-PRODUCT.

More than twenty thousand tons of wood flour, valued at \$300,000, are used annually in the United States in two widely different industries, the manufacture of dynamite and the manufacture of inlaid linoleum.

Wood flour is also used in making composition flooring, oatmeal paper, and in several other industries. It forms one of the means by which the huge waste product of our lumber mills is beginning to find some better means of disposal than the burner. Since a total of 36,000,000 cords of such waste is produced each year at sawmills in the United States, of which about one-half goes into the furnaces as fuel while the rest is burned as refuse to get rid of it, there is no lack of raw material for industries which can develop ways of turning this waste to account.

#### SILAGE EXPERIMENTS.

The Ohio experiment station carried on the following test to determine whether silage could be used profitably to replace some of the grain in a dairy ration. Two lots of four cows each were fed for a period of four months, one lot on a ration containing no silage, but 14 pounds of concentrated feed, the other lot on 60 rations of silage with four pounds of concentrated feed.

The two lots contained practically uniformity of breeding, individuality and time of calving. The results showed that the cows fed on silage averaged two and one-half pounds of milk and one-fourth pound of butter fat daily per cow more than the cows that were not fed on silage. Besides producing more milk and fat, the ration was cheapened considerably as 60 pounds of silage took the place of

ten pounds of grain or six pounds of silage was worth one pound of grain.

The grain consisted of a mixture of oatmeal, corn meal and wheat bran and would cost at least \$28 per ton. This makes our silage worth (one-sixth of \$28) \$4.65 per ton, and it can be produced for \$2.50. The Vermont experiment station found that 28,858 pounds of green corn, converted into silage, produced 11 per cent more milk than the same amount converted into dry fodder. In this case both grain rations were the same.

For the man milking a number of cows the silo is just as important in the summer as in the winter. When pastures get dry and cows go off milk it is difficult to restore them again during the same lactation. It is better to have an early crop for silage to feed the cows when grass is poor, and so keep up the milk flow. When the silo is emptied during the summer it can be filled again in the fall, thus making one silo do double duty, and so cost less.

#### FISH FERTILIZER AND FEED.

Fish scrap, so prepared, is worth about \$40 a ton for fertilizer purposes, according to the U. S. Dept. of Agriculture. It may, however, be used as a hog and poultry feed and as such will bring a higher price. In recent years a considerable market for the material for feeding purposes has been built up on the Pacific Coast by canneries which handle their waste in a sanitary manner that prevents decomposition. This scrap is competing successfully with meat scrap as a hog and poultry feed. A light colored salmon oil has also been obtained. Salmon oil is classed as high grade fish oil which brings ordinarily about 30 cents a gallon wholesale, but at present is quoted at 47 cents. About 27 gallons, worth \$8 to \$12, can be extracted from each ton of raw waste.

#### RAILROAD WAGE PROBLEM.

The train operators are seeking a change in the basis for a day's pay from "10 hours or 100 miles or less, to 8 hours or 100 miles or less."

To accede to this demand would cost \$100,000,000 a year for all the railroads in the United States and a similar increase to other railroad employees would cost \$332,000,000. This sum could be obtained only by increasing freights, or reducing the general traffic efficiency or both. The farmers of the Pacific Coast have not recovered sufficiently from depressed business conditions to stand a raise in freights at this time and we believe it is their desire that the train operators postpone their efforts for a change until business conditions generally are more favorable.

#### SWEET CLOVER.

Three species of sweet clover are frequently cultivated in the United States, white sweet clover (*Melilotus alba*), biennial yellow sweet clover (*Melilotus officinalis*), and annual yellow sweet clover (*Melilotus indica*). The seed of the small-flowered annual yellow sweet clover is readily distinguished from the other two by the smaller size, more rounded outline and rough surface. The difference in shape of the pods serves to distinguish white from biennial yellow sweet clover. The hulled seeds of the two are, however, similar in size and form, and can not all be distinguished with certainty. A portion

#### GET NEXT TO THIS

20 CORDS IN 10 HOURS

LIGHT WEIGHT  
PORTABLE DRAG SAW

3 1/2 H. P. ENGINE



Chain Drive, can be used in any position. Bad weather does not hinder operation; one man operates it and moves it on the log; two men can carry it anywhere.

Write for complete information.  
Simplest, Strongest, Lightest and Fastest Drag Saw Built

D. MacGREGOR

80 Marion Street, Seattle, Wn.

#### Seed Corn

Acclimated, for sale. I have grown corn and made silage the past four years with excellent results of the Golden Dent (Bloody Butcher) variety, which matures early.

Write for prices.

B. S. FRYAR,  
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#### Strawberries

Americus Everbearing strawberry plants. Delicious fruit from August up to freezing weather. One of the finest flavored and firmest berries known. \$1.50 per 100

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#### BEE HIVES AND SUPPLIES

IF YOU own an orchard or keep bees you should have a copy of our

#### 1916 CATALOG

of Bee Supplies listing everything necessary to successful handling of bees and producing honey.

Gives Valuable Information on Pollination. Tells How to keep and care for Bees. Ask for Catalog No. 53

#### PORTLAND SEED COMPANY

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#### CHUBBUCK'S IDEAL GOPHER TRAP

Larger than runaway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for \$2.70; 12 for \$5.10. Money back if you are not satisfied. Free circulars. E. J. Chubbuck Co., Dept. N San Francisco, Cal.

### SUCCESS WITH HONOR

Many hundreds of our silos have been sold in all parts of the West. In one county alone only 7 out of 130 bought some other kind last year.

THE  
**Weyerhaeuser**  
SILOS

Kiln-dried or green lumber will not make steady a sun-proof and wind-proof silo, so we select clear Douglas fir lumber for our staves and doors and air dry them for six to twelve months.

This kind of silo costs no more than a home made or any other kind. Write for price quotations.

**Weyerhaeuser Lumber Co.**  
EVERETT

#### Bigger Crops

are being grown every year by farmers who are improving their soils by using

#### FERTILIME

Government experts agree that Western soils need lime to remove the acid sourness.

Ordinary lump lime is slow to act and 50% waste.

"Fertilime" saves this waste; brings the plant food from the soil; is easy to apply; and acts the first year.

For best results use "Fertilime" in the winter.

If your dealer cannot supply you, write our nearest office.



**F. T. Crowe & Company**

Seattle Tacoma  
Portland Spokane

GROUND LIMESTONE AT LOW RATES

#### SEED CORN

Oregon Golden Glow Yellow Dent, early, large type, heavy yielder of fodder and well matured corn. Has matured in the Puget Sound country. Was awarded first and second prize for this district at First National Corn Show at St. Paul, Minn.; also many local prizes. We have a very choice lot of acclimated seed which we sell at the following prices as long as the supply lasts: Shelled and graded, 1 to 20 lbs., 7c per lb.; over 20 lbs., 6 1/2c; choice selected ears, 1 to 20 lbs., 6c per lb.; over 20 lbs., 5 1/2c. Satisfaction guaranteed.

**J. H. SAMUELSON & SONS,**  
Brownsville, Ore.



of the seeds of biennial yellow sweet clover is blotched with purple spots, while none of the seeds of white sweet clover has such colored blotches. The proportion of the seeds of yellow sweet clover, which are purple blotched, is so variable that it alone

can not be taken as a definite measure.

The sweet clovers are very promising for the Coast Section, but be careful to purchase pure seed, as there is much adulteration in this class of seeds.

## The Rural Credit Question

From a Worker's View Point.  
Thos. P. Ledwidge, Rocklyn, Wash.

Editor, Northwest Horticulturist & Dairyman:—In the April number of your valuable journal you open your columns to a discussion of the Rural Credits question. I do not know all about Rural Credits, but, as a farm hand, I have heard it discussed at most of the farms where I have worked during the last three years, and, being somewhat of a student, I have given the subject considerable study and thought.

Commercial and Farm Credit Compared.

Without entering into the history of Rural Credit agitation or giving any of my own peculiar ideas in regard to money, let it suffice to say, that Credit, within the scope of this discussion, means the extending of a loan of money upon a definite assurance of its repayment at a fixed future time, together with interest. Ordinarily, only those who possess valuable property are entitled to credit, but, since three other elements also enter into the extension of Credit, viz: personal character, administrative ability, and natural or trade conditions that favor success, property may, at times, occupy a subordinate position in the transaction. Banks are Credit institutions and, peculiarly enough, they are Commercial Credit institutions. Owing to the peculiar character of the business they conduct and the method of conducting it, there is no possibility of their being otherwise. They receive the money of depositors, who may want a return of their money at any time, and, in loaning out this money, the banks must safe-guard their own interests and the rights of their depositors by making the loans of short duration; also, they safe-guard the loans by requiring the signatures of other reputable men of property, or take liens upon chattel property that has a definite market value, and can be easily transported, assembled and sold. The goods of merchants, manufacturers, and other traders is usually of this character, while the chattels of the farmer are usually of a slow moving sort and subject to fluctuations in value and deterioration. Further, the goods and chattels of commerce are usually the subject of rapid "turn-over"—that is, they pass from hand to hand rapidly—and the merchant is very likely to have completed his whole transaction in a few weeks; the short time loan suits his business exactly. But it is the other way round with the farmer; his "turn-over" occurs only one a year and his greatest demand for ready cash comes at a time when his commodities are at their lowest value and it is most desirable to hold them for an advance; the short time loan is not only an inconvenience, but a positive detriment to the farmer. Farmers must remember that Commercial Banks cannot loan money on real estate security. If a farmer bor-

rows at a bank on real estate security, he does not receive the money of the ordinary depositor, but money placed there for investment purposes, the bank merely acting as an agent in the transaction. So far as short time loans go, there is one small ray of hope for the farmer in the recent decision that Regional Banks may rediscount the "paper" of farmers for their member banks. This may result in easier money for the farmer, but I do not see that it will make that money any cheaper.

From the above, it will appear that there is a basic difference in the loaning of money to the two classes of borrowers founded on the necessity of the banks to be prepared at all times to return the money of depositors on demand; a thing comparatively easy to do under the short time loan system, but practically impossible under a long time loan system. And, since the necessities of the farmers demand the long time loans, their problem must be worked out apart from the problem of the commercial class; hence the rise of the agitation for Rural Credits, so called.

### Proposed Measures

#### Under Consideration.

There is an obsession in the minds of the people as to the paternal character of the government; and they are continually rushing to the congress with requests and schemes for popular relief. Political parties promise platitudinous panaceas and when they have secured the votes promptly forget their obligations, much to the disgust of the too confiding voters. The late Rural Credit plank of the Democratic platform is a case in point. One hundred and eighteen bills on Rural Credits were introduced in the present Congress and the hopeful ones said with one voice, "Ah! now we shall get something done. See how anxious our representatives are to serve us!" They failed to see that the multiplicity of bills was meant to befog the issue and be the excuse for endless delays and a final dodging of the whole matter.

These bills may be grouped under three heads:

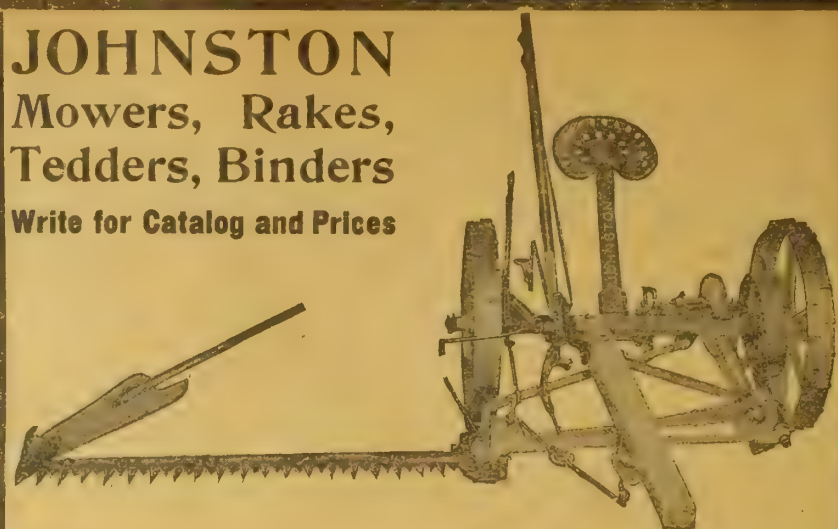
1. The issue of a special currency and its direct loaning to the farmers thru a Bureau of Loans.
2. Money raised by the sale of Government bonds and its loan to farmers thru Government Land Banks, and
3. District borrowing associations of farmers known as Land Banks; these banks to raise money by the sale of their own bonds, these bonds to be guaranteed by the Government.

All of these schemes are open to objections—some more violent than others. Condensed, they amount to this:

- 1 The purchase of the four billion dollars of land mortgages by a special issue of money for that purpose would so inflate the currency that land and other prices would soar out of sight, interest rates would more than double, business would go

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## Seed Corn

Matured in the Tolt Valley (King County) in time for the Duvall Fair, September 2nd, last year—10 cents per ear; \$8.00 per 100 ears.

We offer in bulk Pride of the North, King Philip, White Dent and Yellow Dent, at \$5.00 per 100 lbs. Add postage when ordering by parcel post.

Root crops for Stock, Turnip and Rutabaga Seed—3 lbs. for \$1.00 postpaid.

Get our Catalog for complete descriptions of these and other late sown crops.

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When the Wagon  
Is Piled High

**MICA AXLE GREASE** protects your spindles. Big loads can't affect the cool, slippery lubricating film formed by the powdered mica. It makes the grease twice as efficient—makes it last twice as long. A special process blends the mica with the highest grade petroleum grease—no other grease like Mica Axle Grease. Get a can from your dealer today.

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**MICA AXLE GREASE**

## Milton Nursery Co.

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

**Milton Nursery Company, Inc.**

Milton, Oregon



to pieces and all our bankers and money loaners would have so much ready money on hand that they could not reinvest it. Driven mad by the possession of so much cash our wealthy class would probably suicide in a body, and then where would we be for anybody to carry on business for us? There is no answer to this argument.

2. This is pure paternalism. It makes a child of the farmer and robs him of his independence. It prevents him from acquiring that knowledge of business so necessary to success in this workaday world; also it makes a multiplicity of institutions and creates another nest for a bunch of "lame ducks." We have the Regional Banks that could very readily perform these functions; why add to our burdens?

3. More paternalism; but not so bad as the others. If the Government is going to guarantee the bonds of farmers, then it must guarantee railroad and commercial bonds of all kinds, or it will be guilty of class favoritism. Besides, farmers in this country are different from farmers in other countries; there is no survival of Feudalism and the American Farmer will not join an association in which his lands may be held for debts on other lands.

#### Framework which Appears Practical.

Now you may take these objections for what they are worth, and I am free to confess that they are all worth something. They all have their weight and influence; some more than others, but combined they are sufficient to put a stop to Rural Credit legislation. No matter how great the necessity for relief, the farmer is not going to get it from Congress. There is a basic reason for this which is inherent in our political system and will only be cured when we change from Territorial Politics to Industrial Politics—a thing which is a long way in the future and need not be discussed here.

My conclusion is that the National Congress will not pass any acceptable Rural Credit legislation. There is no organized Force behind the demand for such legislation and no harmony of ideas or action among those who are advocating it. Whatever the farmer gets in the way of easier and cheaper money he will have to create for himself. Necessity is the mother of invention and it is not beyond the genius of the American farmer to adapt some one of the European systems to his own use. In fact it is being done now by the farmers of Kansas—always the pioneers in revolutionary ideas—and I give you herewith a resume of the character of their Rural Credit Association. I quote from their prospectus.

Chartered by the State and supervised by the Banking Department. Limited liability. Capital Stock and a Surplus of equal value subscribed and paid in.

Shares \$100.00 each. Surplus of \$100.00 for each share of stock. No Promotion Stock—every dollar works for the Association. Half the capital stock goes to a guarantee fund—half to the working capital. A Trust Company is formed out of the Surplus Fund, the stock of which is distributed to the shareholders of the Association in proportion to their shares in the Association. This Trust Company holds the mortgages

of the Association and issues the bond against them. All bonds are secured by first mortgages and by the capital stock of the Association.

No one may hold more than one percent of the capital stock, and, no matter how much stock a person holds, he has only one vote. The Guarantee Fund is deposited with the State Treasurer of Kansas. There are fifteen Directors. Loans are made only to shareholders. Securities are First Mortgages on Farm Lands and are payable on the "Amortization plan" in periods up to 35 years.

The purposes for which loans shall be made are:

(a) To complete the purchase of farm lands.

(b) To improve and equip farms.

(c) To transfer farm mortgage debts from private lenders to the Association.

Loans shall not be for more than 50 per cent of a fairly appraised value of the land.

The Association is authorized to issue bonds to an amount equal to twenty times its capital stock and surplus.

The Capital Stock is \$500,000.00.

Surplus is \$500,000.00.

Total investment \$1,000,000.00.

Bonds authorized \$20,000,000.00.

Borrowing by Bond Method—Amortization.

Two great principles are exemplified in the scheme of this Rural Credit Association. First, borrowing money by issuing bonds against the security of many mortgages and second, reducing the loan each year by a small payment on the principal—Amortization.

This Association figures to sell its bonds in the open money market at not more than 5% per annum and its loans to borrowers are figured at 6%, giving 1% to cover expenses and profits; which, when you consider that it may insure bonds to 20 times its capital stock and surplus, will reap it a tidy profit; this profit being distributed back to the borrowers, who are the shareholders.

Under their plan of "amortization," using \$1000 as the basis of calculation, a loan may be paid off in the following terms and at the following rates:

|            |                    |
|------------|--------------------|
| 11 years @ | \$135 per annum.   |
| 12 years @ | \$120 per annum.   |
| 14 years @ | \$110 per annum.   |
| 16 years @ | \$100 per annum.   |
| 19 years @ | \$ 90 per annum.   |
| 21 years @ | \$ 85 per annum.   |
| 24 years @ | \$ 80 per annum.   |
| 32 years @ | \$ 70 per annum.   |
| 35 years @ | \$67.50 per annum. |

A borrower may cancel his loan at the end of any annual period and payments on the principal in sums of \$100 or multiples of \$100 may be made at the end of any annual period, thus shortening the term of the loan.

Can you beat it, Mr. Editor or reader? Here is the whole question solved and without going outside of your own house. Do it yourself before George does YOU. I believe the Trust laws of the State of Washington are such that an association can be formed to do anything but run for political office or preach the gospel, and certainly an effort should be made by the farmers to solve the thing themselves rather than to play the baby act and go whining and begging to the Congress. Of course I'm only a farm hand and I don't



## The Law says KILL 'EM

Did you know there's a California law compelling all persons to rid their land of ground squirrels? But law or no law, you're alive to the damage these pests do to crops and trees and land. You want a cheap, easy way to fight them.



Will Kill 'Em All

It is simple, sure, quick and practical. Saturate a waste ball in Kilmol, place it in burrow and after 3 or 4 minutes ignite. The deadly fumes remain in the burrow for hours—the rodent can't escape, 100 per cent efficient. Results guaranteed or money refunded. Used by Government, State and County officials. We sell waste balls—better and cheaper than home-made. Write for interesting information about squirrel and gopher eradication, and also ask about new U. S. Government formula of poisoned barley.



Kilmol in the United States Destructive Gives 100% Efficiency. Invented by U. S. officials.

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Air slacked lime. Land plaster. Now is the proper time for application. A Full Line of Building Material.

Write us for prices.

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TACOMA, WASH.

C. S. Barlow, Prest.

PHONE MAIN 21

## The Wheat Yield Tells the Story

of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc.

There is no war tax on land and no conscription. Write for illustrated pamphlet, reduced railroad rates and other information to

**J. N. GRIEVE**  
Cor. 1st & Post Sts., Spokane Wash.  
Canadian Government Agent.

NO PASSPORTS ARE NECESSARY TO ENTER CANADA

## What Does Silage Cost?

The acres used and cultivated time and again, and the area to be gone over to get the fodder—aren't these the big items in Silage cost?

Nitrate of Soda, as a Top Dressing worked in at last cultivation, will lessen your charges and cheapen production of Silage.

Bigger, more succulent stalks and bigger ears will be yours.

Send post card for free book on "Corn Cultivation"

**DR. WILLIAM S. MYERS**  
25 Madison Avenue, New York

### POWER SAW BARGAINS

Portable wood saw with 6 h.p. Waterloo Boy gasoline engine, or a King of the Woods Drag saw, 4 h.p., capable of 40 ricks per day, \$100 down and balance \$185 long time on either. Both are new. The factory price is \$350. Address

**AGRICULTURAL ENGINEERING CO.**  
Seattle, Wash.

**FARM PROPERTIES**—Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. **DANIEL MCGREGOR**, Berlin Bldg. Tacoma, Wash. Established over 30 years.

Dairy and Stock Ranch, 1200 Acres, 300 acres bottom land, cultivated, 50 head stock, hogs, horses, implements, tractor, good buildings, running creek, write for full information, on Western Washington Stock Ranches.

**GEORGE M. ELLIOTT**  
205 Equitable Bldg., Tacoma, Wash.



"heap sabey" a whole lot of things, but it seems to me that I'd make an effort to do the thing on my own hook rather than to run off to Congress and get snubbed and laughed at for my pains.

This Kansas plan takes the farmer into the open money market of the world and places the lenders in competition with each other for the very best secured loan that any one can get. It offers long time gilt-edged security and not only has a reasonable chance to get the money, but an equally reasonable chance that it will get the money on the very best terms that the state of the market will allow. In Germany, the Land Bank bonds are regarded with greater favor than the bonds of the Imperial Government, and the prevailing rate for these bonds in all European countries is about 4%. I do not doubt that equal success may be achieved here in the United States, if only a little good judgment and common honesty are used in launching the scheme. Here is no paternalism, but intelligent self help; here is no inflation (bugaboo of the bankers) but a bid for money on the market of the world; here is a Business not a political institution; the employees of this Association hold their jobs thru efficiency and not thru "pull;" there is no class legislation in this, only plain business; and it avoids that other objectionable feature of holding all the lands of a district until the last stiver is paid by the most dilatory subscriber.

Everything that has been asked of Congress is answered by this Rural Credit Association, and, since you can do it yourselves, why go to Congress with it? Let us have an end of this silly fawning at the feet of Congress and go to work as reasonable men should do and solve the thing in a business way. Kansas points the path just as she has in so many other instances, and if we could follow her in Prohibition, we can do no better than to follow her in the matter of Rural Credits.

#### FARM EXTENSION WORK.

In King County, Washington.  
From the Report of Floyd W. Rader.

The foundation has been laid for some valuable co-operative work among farmers during the first year by the county agriculturist in King County. Among these may be mentioned drainage districts, cow testing associations, liming of soils, crop production at lower cost, the standardization of various farm products and united efforts in the sale or disposition of the crops.

The following suggestions from this report is pertinent:

##### Clover Seed.

The clover seed industry is one which has so far received but little attention. Under natural conditions, where clover grows along public highways and in protected places, abundant seed is produced. Much seed is used in Western Washington, hence this is a profitable field to be developed.

##### Corn Growing.

More home grown feed is one of the big problems of Western Washington dairymen. As previously stated, this has been one of my main problems as County Agriculturist. As a succulent feed, corn as silage is considered one of our leading crops. Many people are still of the opinion

that corn cannot be successfully grown in King County. I have however, located farmers in nearly every section of the County who have been growing this crop with marked success for a number of years.

I have found fields of mature corn that will average from 15 to 20 tons of silage per acre. This past season, I measured, cut and weighed the corn, husked and weighed the shelled corn from a portion of a 10-acre field of corn grown by Mr. Ira J. Pearsall, of Enumclaw, Washington, which made 17.88 tons of silage per acre, and weighed out 133.3 bushels of corn per acre, figuring 80 lbs. per bushel. The moisture content is usually from 10% to 20%. Figuring that our Western Washington corn contains as high as 30% moisture, we would still have a yield of 93.4 bushels of dry shelled corn per acre.

This past year I assisted some 20-odd farmers in securing acclimated seed and later assisted them in selecting their own seed for the coming season. Approximately 100 farmers secured home grown seed for their 1916 crop.



(Floyd W. Rader)

##### Farm Survey Work.

During the past summer, I secured the assistance of the State Farm Management Demonstrator to assist in conducting a Farm Survey in two different sections of this County. The purpose of this survey was to make a business analysis of a large number of farms, in order that we might better understand the farming conditions as they exist and thus be able to show why the most successful farmers are making a success and wherein other farming practices fail.

During the month of June we took business records of 60 farms in the Snoqualmie Valley and 60 farms in the Enumclaw Valley. These records included the valuation of all property, such as the real estate, live stock, farm equipment, crops on hand and cash on hand to run the farm. All receipts for the year, including every thing that was sold from the farm, the increase in value of live stock, etc., and all expenses such as hired help, purchase of live stock, farm equipment, taxes, depreciation of farm buildings and farm equipment, and a charge of 5% on capital invested, were taken. From this data we were able to show what each farmer received for his time and managing ability for the year. This we call Labor Income. No account was taken however, of house rent or

Straight Distilled  
Refinery Gasoline

**RED  
CROWN**  
*the Gasoline of Quality*

reduces your gasoline cost because every drop atomizes evenly through the carburetor and gives full power.  
Dealers everywhere and at our SERVICE STATIONS.

**Standard Oil Company**  
(California)

Use ZEROLINE, The Standard Oil for Motor Cars



**SEEDS**  
If you are looking for Good Seeds  
in Corn or Root Crops, then send for Catalog.

**SEATTLE SEED CO.**  
SEATTLE, WASHINGTON

### Filling the Silo

and cutting the ensilage in ONE operation—with a smaller gasoline engine, or higher with the same power, than any other machine—that's the record made by the

#### PAPEC PNEUMATIC ENSILAGE CUTTER

Fill your silo whenever your ensilage is ready to go in. Don't wait for your neighbor's. The investment is small and the expense saved pays big dividends. Write for descriptive Catalog.

WE ALSO  
SELL ALL  
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DAIRY MA-  
CHINERY,  
BARN EQUIP-  
MENT AND  
SUPPLIES.  
ASK FOR  
CATALOG.



**Dairy Machinery Co.**

907 WESTERN AVENUE  
Seattle, Wash.

### HOPE FARM SEEDS

**WHITE SPRING VETCH**—Pure creamy white (new), good as split peas for the table; 100 per cent better than common vetch for stock. Try it and get a start. 10c per package, 6 packages for 50c.

**HILL SELECTED POTATOES**—Varieties, Factor, Up-to-date, smooth high quality, heavy yielders, very best two. State quantity wanted and write for prices.

**FIELD CORN**—Acclimated to the Coast section. Strong vitality, kept dry sure to grow. Varieties, Yellow Dent and Rutherford, both good. State quantity wanted when writing for prices.

As the demand is likely to be stronger later in the season, to insure your order being filled, please make reservation as early as possible.  
Kindly mention this paper when writing.

**C. E. FLINT & SONS**  
BLAINE, WASH.



of the produce used on the family table. Thus the farmer should be credited with approximately \$425 per year for these accommodations.

A few figures from the survey, giving averages only, will be of interest:

#### Enumclaw Valley.

How to figure Labor Income.  
Capital invested ...\$12,028.00  
Farm receipts .....\$1700.00  
Farm expenses ..... 839.00

Farm income (receipts less expenses ..... 861.00  
Interest at 5% on capital ... 601.00

Labor income (or what the farmer received for his years work and managing ability .....\$ 260.00

#### Value of Good Sires.

Many farmers are using pure bred sires to increase the quality of their herds and receipts per cow, thus the relation of a pure bred sire and a grade sire follows:

#### Enumclaw Valley

| Grade of Sire     | No. Receipts | Labor |
|-------------------|--------------|-------|
| Farms per Cow     | Income       |       |
| Grade Sire ....41 | \$ 90        | \$208 |
| Pure Bred Sire 16 | 107          | 423   |

#### Snoqualmie Valley.

| Grade of Sire     | No. Receipts | Labor |
|-------------------|--------------|-------|
| Farms per Cow     | Income       |       |
| Grade Sire ....26 | \$ 73        | \$131 |
| Pure Bred Sire 13 | 93           | 455   |

Taking no account of the increase of value of live stock, farmers using pure bred sires in the Enumclaw Valley made \$17 more per cow than farmers using grade sires; and in the Snoqualmie Valley \$20 more per cow than where grade sires were used.

Since returning this data to the farmers last month, I have already assisted one farmer in selecting a registered sire to head his dairy herd, and have requests from six more farmers to locate registered sires for them.

The business men of Duvall, in charge of the Duvall State Bank, after hearing this data presented, offered to buy registered sires for any farmer tributary to Duvall, loan-

ing them money at 4% interest on long time loans. This speaks well for those in charge of that institution and shows they have the interest of the farmers and their community at heart and desire to assist in building up their leading industry.

#### Youth's Club Work.

The plan was favorably received. A committee of five principals and myself were appointed to adopt certain lines of Club work to be followed this coming year and to outline plans of procedure. I am at this time completing outlines to be presented and voted upon at our next meeting. It was decided however, at our last meeting, to encourage three lines of club work for 1916, namely:

Girls' Home Canning.

Boys' Stock Judging (especially dairy work).

Corn Club Work.

I have the support of the County Granges in offering good cash prizes to the County boy or girl growing the best ear of field corn; the best 10 ears of field corn and the best yield per acre of corn and silage. This will assist greatly in carrying on this line of work. Again, we are adopting those lines of club work which are not only of value to the contestants, but also of much value to the community, in that we are developing work along the lines of our leading industries.

#### Outside Assistance.

In handling the agricultural problems of this County, I have secured free of charge to the farmers of this community, the services of 15 men from the State Agricultural College and 8 men from the U. S. Department of Agriculture, who have personally called and assisted with many of these local problems. They have assisted materially with such work as engineering work on two drainage projects, demonstrational work in clearing logged off lands, organizing cow-testing associations, farm survey work, boys and girls club work, and in dealing with plant and animal diseases.

## Blasted Out

with



You know the difficulty of getting the roots of stumps out with pullers, by burning, or by using explosives that merely shatter. You need explosives that not only shatter but also lift and heave—that tear the roots and make clearing easy. You can save work, time and money by using

## GIANT FARM POWDERS

STUMPING — AGRICULTURAL

—made by a Pacific Coast company, with 50 years' experience, especially to meet Western agricultural conditions.

"Your powders shoot the roots and spread wide in the ground instead of going down. They are the best we have used," says G. S. McCartney, Russellville, Ore.

There are two Giant Farm Powders—Eureka Stumping Powder, for dry work, and Giant Stumping Powder, for wet work. Test them alongside of any others. Write us and we will have our nearest distributor supply you—at lowest market prices—with a trial case that will prove to you the economy of using Giant Farm Powders.

### Five Valuable Books Free

We issue five handsome, illustrated books to help you to blast cheaper and better. Any or all of these books—written by western men for western farmers—sent on request. Mark and mail the coupon.

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Write below your dealer's name.

## IRRIGATION

Adequate, available moisture during growing seasons.

### IRRIGATION OF ALFALFA.

Where the border system is used the fields are best laid out in strips 25 to 75 feet in width (preference being given to the narrower) and from 200 to 600 feet in length (preference being given to the shorter). Small ridges or levees guide the water down these strips, the water being applied in sheet covering the land between the levees.

For the check system the entire field or any part of the field is surrounded by a levee and water run in until the entire surface is covered.

The time of irrigating alfalfa is a matter concerning which there is much debate. Alfalfa does best when the soil contains just the amount of water it can use to advantage; too much water produces poor hay and too little water makes a short crop.

Seasonal and soil conditions control to a considerable extent the amount of water to be applied at one time and the frequency of the applications. Dry and windy weather makes heavy applications of water necessary, and soils which will retain but a small portion of the water

applied require frequent light irrigations, though it should be borne in mind that alfalfa is a deep-rooted plant and no opportunity should be lost to encourage the roots to go deep into the soil for moisture.

The rule adopted by many alfalfa growers is one irrigation for each cutting, or ordinarily this is sufficient. In some sections one irrigation is given before the first cutting, with one irrigation between the cuttings, and one after the last cutting.

If the rule of one irrigation for each cutting is followed, there remains the question of whether it is best to irrigate just before or just after the cutting. Irrigation before the cutting has the disadvantage of making the distribution of water more difficult, due to the heavy growth of the crop; also it is claimed that the hay cures better on dry than on moist land. Irrigation after cutting is more easily accomplished, but it has the disadvantage of permitting the soil and the plant crowns to dry out, and the second cutting comes on more slowly than is the

## GROUND LIMESTONE

Thousands of farmers will apply ground limestone on their soils early this year. Price very reasonable.

We supply it in any quantity from 100 pounds to ton or car-load lots.

### Savage-Scofield Co.

1533 Dock St.

Tacoma, Wash.

## SEED CORN

Pearsall's Favorite Ensilage Corn  
Pearsall's Bloody Butcher  
Pearsall's Forage Popcorn  
Golden Bantam Sweet Corn

Acclimated—10th crop—well matured—perfectly dry. It will grow. Price 20c per pound f. o. b. Order early to insure supply.

IRA J. PEARSALL,

Enumclaw, Wash.

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Hallocks and slices.

C. F. Keller, Prest.

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Phone Black 306

Puyallup, Wash.

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case when the ground is moist when the crop is taken off.

Don't over-irrigate your alfalfa. If an excess of water is applied the plants will endeavor to throw off the excess into the air, and in doing so the natural condition of the plant is changed, and coarse, woody hay results. On the other hand, too little water results in scanty foliage.

A saving in irrigation may be accomplished if the alfalfa field is cultivated well with the disk, harrow, or special alfalfa cultivator at least once each year. The best plan is to so cultivate the field early in the spring and again after the last cutting.

On fairly good soils, in sections of 12 to 15 inches of rainfall per year, 18 inches of irrigation water should be sufficient to produce three cuttings of alfalfa. This duty of water may be changed, due to more or less rainfall or soil and weather conditions.

You can influence the quality of alfalfa hay by the amount of water applied. Try to give the crop all the water it can utilize without inducing rank growth.—L. D. O'D., In Reclamation Record.

### IRRIGATION FOR PIERCE COUNTY PRAIRIES.

An irrigation project for the prairies lying south of Tacoma, in Pierce County, has taken definite form. Mr. Henry Bucey is taking a leading part in the promotion of this very important enterprise. In a recent issue of the Tacoma Ledger he states that the project contemplates taking the water from the Puyallup River about 3,000 below where the Electron power plant discharges the water from that plant back into the Puyallup River. At this point there has been filed upon 400 second feet of water for irrigation purposes—a flow of water of the amount of 400 cubic feet of water every second of time. This amount of water would irrigate 64,000 acres of land in the Yakima Valley and other like irrigation districts, and it will be sufficient to irrigate 50,000 acres of those beautiful prairie lands immediately south of Tacoma extending nearly to the town of Roy. The intake site has been obtained, with seven or eight miles of right-of-way, and part of the right-of-way has been cleared. A survey of the main canal has been completed to a point about three miles east of the town of Spanaway. From this point two main laterals will continue, one running west on the high land and reaching the land around American and Steilacoom lakes and south; the other running south, taking in the country around Spanaway, Lake View, Hillhurst and south. Many thousand acres of land along the main canal will be supplied before the branch laterals are reached.

#### Gravity System.

The water will flow by the gravity system from the intake upon these prairie lands. The first five miles of the system will be carried in continuous stave pipe. This is thought necessary to secure the safety of the main line near which it runs and upon the upland overlooking the Puyallup River.

It was supposed by most of the people that the water would run through the soil from the canal and that the canal would have to be cemented to hold the water. But

experience has proved this not to be a fact. The Sequim prairie, lying about 18 miles east of Port Angeles, containing originally about 3,000 acres, was considered so gravelly that water would run right through it. But the farmers put water on it from the Dungeness River and they found that the silt closed up the soil so that irrigation proved a great success. Sequim prairie is more gravelly than the prairie land south of Tacoma. You cannot buy an acre of Sequim land for less than \$250—and much of it is worth \$500 an acre. The whole prairie is covered with gardens and grain and pasture land, and dairy ranches are dotted over it. They are now clearing the timbered land around the prairie and putting it under irrigation.

These prairie lands south of Tacoma will prove productive generally. They lie against the second city of the state and are traversed by paved highways, street car lines and four great continental railroads. Its slope and position will make such soil, when supplied with water, exceedingly productive for fruits, vegetables, grains and grasses of all kinds. Alfalfa and clover will grow luxuriantly when plenty of lime is added to the other elements of fertility.

#### Overhead Sprinkling System.

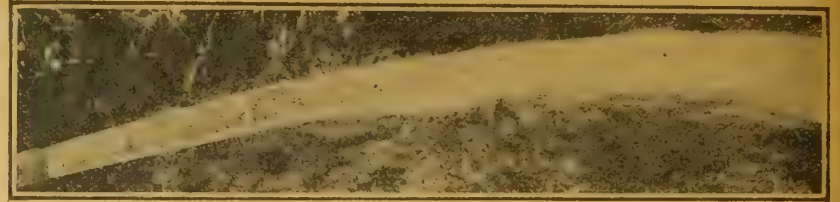
In certain sections of the eastern part of this state they are installing the overhead sprinkling system. By this system you can turn a faucet and sprinkle or irrigate your land by the acre—you can have it rain every night if you think your crop needs it. Under this system there will be no ditches or leveling off of the land. Those that are using such a system would not have any other. It takes less water and less labor to apply it. The system costs from \$75 to \$100 an acre to establish. On some of this prairie land it will cost considerable to level it for irrigation. The system can be established in less than two years for this project.

• The Tacoma Commercial Club & Chamber of Commerce has taken the matter under consideration through its various committees and it will soon be presented to the club proper. The main laterals will be surveyed immediately and a company organized to go forward with the work, pushing it to completion at an early date.

### FREQUENCY OF IRRIGATION.

According to experiments by Don H. Bark, Irrigation Engineer in Idaho of U. S. Department of Agriculture, the number of irrigations required during the season is dependent upon the soil, climate, and class of crop. Other things being equal, porous soils which have a low water-holding capacity and the very impervious soils which absorb only small quantities at each application, will require irrigation oftener than soils of the medium types. Alfalfa and pasture grow throughout a longer season than the grains and consequently require more irrigations. The number of irrigations required during the season may vary from 1 on winter grain in the high altitudes of Montana to as many as 20 on alfalfa in southern California and Arizona, if the same be planted on porous soils. The number of irrigations required under conditions similar to those of Idaho is approximately three for grain and five for alfalfa. The average number applied in this investigation on all types of soils

## IRRIGATION and DOMESTIC FORCE PUMPS

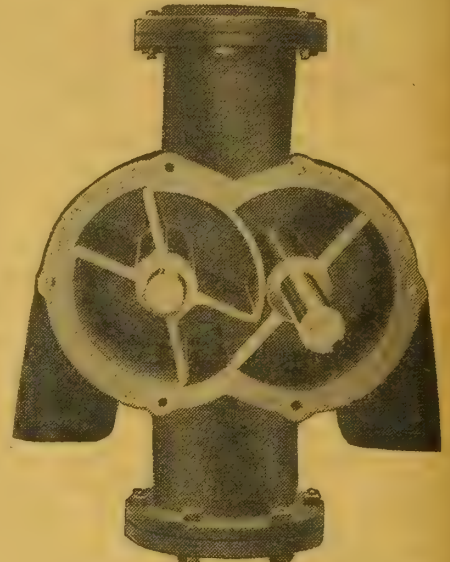


A SURE STEADY FLOW OF WATER WHEN AND WHERE YOU WANT IT  
MORE WATER WITH LESS POWER

IRRIGATE WHEN AND WHERE YOU WANT IT, WITH A NATIONAL TY-PHOON PUMP. The highest and most efficient pump on the market today.

It is simple, durable, made heavy for wear and long life; has slow speed, is positive acting, having no springs, valves, cams, packing or pistons to wear and get out of order. Actually pumps more water with less power due to its HIGH EFFICIENCY.

Compared with others, they COST LESS, LAST LONGER, give less trouble and MORE SATISFACTION, and are FULLY GUARANTEED. A Western product, made and sold on its merits. Write for Bulletin No. 12, which contains valuable information for you.



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### UP-TO-DATE-FARMERS INSTALL WATER SYSTEMS

There are numerous kinds, some good others better, and one BEST. Write THOS. J. ROSS, Portland, Ore., who will tell you free of charge, of the ONE BEST. It is important to you. Make no mistake. Post yourself and have no regrets.

### STERLING RAMS PUMP WATER



The STERLING is an IMPROVED HYDRAULIC RAM made in all sizes for irrigation projects, city water works, farm and home water supplies, etc. Every Ram guaranteed. Capacity 2 to 5500 gals. per minute. Prices from \$25 up.

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### YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

### SEED CORN

Wonderful White Dent Ensilage Corn, acclimated in Western Washington; 8 to 11 feet high, matures early in September. Price, postpaid, shelled, 20c per lb; 10 lbs., \$1.75; 10 ears, \$1.00.

T. McCLINTOCK, Burley, Wash.

was 3.1 for all grains and 5.4 for alfalfa. Clean-cultivated orchards on deep soils of medium texture will seldom require more than two or three irrigations per annum. A safe rule to follow for hay and pasture grasses is to apply a sufficient number of light irrigations during the season so that plants will not wilt for lack of water.

Packard and other prominent automobile engineers favor motor oils from Western crude.

Exposition juries at San Francisco and San Diego gave highest competitive awards to Zerolene—an oil from Western crude. Zerolene is the best oil for your motor because scientifically refined from selected California crude—*asphalt-base*. Government experts tell us that oils correctly refined from asphalt-base crude "distill without decomposition" [do not break up and lose their lubricating value under cylinder heat] and are "much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils." When you empty the crankcase refill with Zerolene. Dealers everywhere and at service stations and agencies of the Standard Oil Company.

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*The Standard Oil for Motor Cars*

**STRAWBERRIES**—Pure bred plants, Everbearing varieties. Asparagus, Rhubarb and all vegetable plants. An interesting catalog. Send for yours TODAY. KELLY GARDENS, East Spokane, Wash.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FORBES

### PLAYING THE GAME.

Life is a game with a glorious prize,  
If we only play it aright.  
It is give and take and build and  
break,

And often it ends in a fight;  
But he surely wins who honestly  
tries  
(Regardless of wealth or fame;)  
He can never despair who plays it  
fair—  
How are YOU playing the game?

Do you wilt and whine if you fail to  
win

In the manner you think your due?  
Do you sneer at a man in case that  
he can,

And does do better than you?  
Do you take your rebuffs with a  
knowing gain?

Do you laugh though you pull up  
lame?  
Does your faith hold true when the  
world's blue?

How are YOU playing the game?

Get into the thick of it—wade in.  
boys!—

Whatever your cherished goal;  
Brace up your will till your pulses  
thrill,

And you Dare—to your very soul!  
Do something more than make a  
noise;

Let your purpose leap into fame  
As you plunge with the cry, "I shall  
do or die!"—

Then YOU will be playing the  
game.

—Selected.

### YOUR BOY.

This is a good time to think of  
your boy. If you do not look after  
him in the right way, someone will  
do it in the wrong way. Begin now!

Teach your boy to follow in the  
footsteps of his father, to respect the  
law, to obey his parents, to regard  
the rights of all men, to honor vir-  
tue, to respect womanhood, and to  
depend upon no one but himself for  
his advancement.

Teach him that the Golden Rule of  
life will be found in the Ten Com-  
mandments. They are short. They  
have survived the ages. They stand  
today unchanged and unchallenged.

They comprise the first great writ-  
ten law given by God to man. Before  
these few commandments all man-  
made laws fade into insignificance.  
Teach them to your boy. There is  
danger ahead if you do not.

The universal drift of mankind is  
toward decadence. Heredity pays  
its premium and also exacts its dis-  
count. The son of a good father and  
an affectionate mother, brought up  
in an atmosphere of parental regard,  
never will disgrace the family.

The boys of today are to be the  
men of tomorrow. The destinies of  
the American people are to be in the  
hands of their sons. If the boys  
are taught respect for the law, both  
human and divine, obedience to  
authority, manly independence and  
the fear of God, this great nation  
will be a noble monument to man's  
capacity for self-government and  
self-control at a time when all the

world is a seething cauldron of un-  
rest, unreason and disbelief.

Teach your boy to rule, but first  
to rule himself—Leslies Weekly.

### PROPER FOOD FOR CHILDREN.

Questions Every Mother Should Ask  
Herself.

Caroline L. Hunt, of the Depart-  
ment of Home Economics, U. S.  
Department of Agriculture, suggests  
that at the close of the day every  
mother might ask herself the fol-  
lowing questions, to be sure that  
she has considered the important  
things in feeding her children:

Did each child take about a quart  
of milk in one form or another?

Have I taken pains to see that  
the milk that comes to my house has  
been handled in a clean way?

If I was obliged to serve skim  
milk for the sake of cleanness or  
economy, did I supply a little extra  
fat in some other way?

Were the fats which I gave the  
child of the wholesome kind found  
in milk, cream, butter, and salad  
oils, or of the unwholesome kind  
found in doughnuts and other fried  
foods?

Did I make good use of all skim  
milk by using it in the preparation  
of cereal mushes, puddings, or other-  
wise?

Were all cereal foods thoroughly  
cooked?

Was the bread soggy? If so, was  
it because the loaves were too large,  
or because they were not cooked  
long enough?

Did I take pains to get a variety  
of foods from the cereal group by  
serving cereal mush once during  
the day?

Did I keep in mind that while  
cereals are good foods in themselves,  
they do not take the place of meat,  
milk, eggs, fruit, and vegetables?

Did I keep in mind that children  
who do not have plenty of fruit  
and vegetables need wholewheat  
bread and whole grains served in  
other ways?

Did each child have an egg or an  
equivalent amount of meat, fish, or  
poultry?

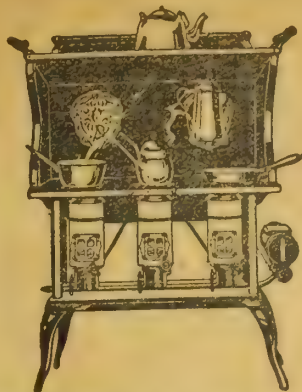
Did any child have more than this  
of flesh foods or eggs? If so, might  
the money not have been better  
spent for fruits or vegetables?

If I was unable to get milk, meat,  
fish, poultry, or eggs, did I serve  
dried beans, or other legumes thor-  
oughly cooked and carefully sea-  
soned?

Were vegetables and fruits both  
on the child's bill of fare during the  
day? If not, was it because we have  
not taken pains to raise them in our  
home garden?

Did either the fruit or the vege-  
table disagree with the child? If so,  
ought I to have cooked it more thor-  
oughly, chopped it more finely, or  
have removed the skins and seeds?

Was the child given sweets be-  
tween meals, or anything that  
tempted him to eat when he was not  
hungry?



Like Gas  
for comfort  
and convenience

## NEW PERFECTION OIL COOK-STOVE

No coal, wood or ashes  
to lug—no waiting for  
the fire to burn up. Bet-  
ter cooking because of  
the steady, evenly-dis-  
tributed heat, under  
perfect control. All heat  
concentrated on the  
cooking and not radiated  
around the room. The  
long, blue chimneys  
prevent all smoke and  
smell.

Bakes, boils, roasts, toasts.  
More efficient than your  
wood or coal stove and costs  
less to operate.

Use it all the year 'round.

STANDARD OIL  
COMPANY  
(California)

For Best Results  
Use Pearl Oil

Better cooking  
and a cleaner,  
cooler kitchen.  
Now serving  
2,000,000  
homes

In 1, 2, 3 and 4-  
burner sizes, with  
or without oven.  
Also cabinet  
models with  
Fireless Cooking  
Ovens.

## THE LANG HOT BLAST Smoke==Burning==Range

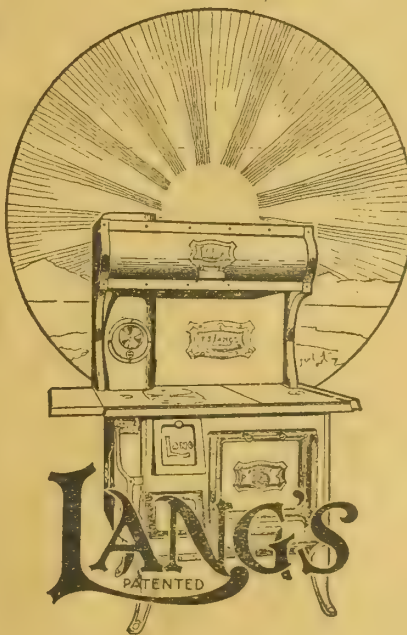
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The only range that will burn  
wet and green wood, and hold  
fire overnight. Also burns coal.

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buy a stove. Send for catalog  
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High quality, prompt service, right  
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Native Shrubs, Plants and Flowers,  
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and Dairyman



## CHOOSING A VOCATION.

There is no panacea that will cure the yearning for city life evidenced by the country boys and girls of today, but there are certain conditions which if established will add materially to the attractiveness of life in the country, and should therefore prevent them from flocking to the cities merely to avoid life on the farm. It is not to be expected that every person reared on a farm will desire to follow farming as a life work, nor is it necessarily desirable that they should do so. Many of the boys will feel a calling to one or another of the professions, and it is probable that if allowed to follow their bent, they will be far more successful and contented than if overpersuaded to stay with the farm. The problem is not to force the boy or girl to remain on the farm, but to assist them in every way in making an intelligent choice. Their choice can not possibly be intelligent unless they are familiar with farm life under its best conditions.—E. B. McCormick, Chief, Division of Rural Engineering, Office of Public Roads and Rural Engineering, Yearbook, 1915, U. S. Department of Agriculture.

MARSHALL FIELD'S  
MEMORANDA.

These were Marshall Field's "Twelve Things to Remember"

The value of time  
The success of perseverance  
The pleasure of working  
The dignity of simplicity  
The worth of character  
The power of kindness  
The influence of example  
The obligation of duty  
The wisdom of economy  
The virtue of patience  
The improvement of talent  
The joy of originating.

LINCOLN, THE BUSINESS  
MAN.

Mr. R. O. Bierman, well known in Chicago as the teacher of the art of selling, contributes an extract from one of his lectures presenting a new and interesting aspect of Lincoln's character. The power and simplicity which have gained for the great leader the lasting love and reverence of a nation, are brought out in a striking manner in the following extract:

"The effectiveness of a suggestion," says Mr. Bierman, "depends much upon the source from which it comes. The most powerful source is a person who assumes to have and is believed to possess a friendly and sympathetic attitude. To quote Abraham Lincoln as an authority for

business usages and practices may seem quite peculiar, but he has given us one of the most comprehensive rules for suggestion along the strictest ethical lines to be found. Lincoln says, 'When the conduct of men is designed to be influenced, persuasion—kind, unassuming, persuasion—should ever be adopted.' It is an old and true saying that 'a drop of honey catches more flies than a gallon of vinegar,' so with men. If you would win a man to your cause, first convince him that you are his sincere friend, therein is a drop of honey that catches his heart, which, say what you will, you will find but little trouble in convincing his judgment of the justness of your cause, if indeed that cause be a just one. On the contrary assume to dictate to his judgment or to command his action or to mark him as one to be shunned or despised and he will retreat within himself, close all the avenues to his head and his heart, and though your cause be naked truth itself, and though you throw it with more than herculean force and precision, you will be no more able to pierce him than to penetrate the hard shell of a tortoise with a rye straw. Such is man and so must he be understood by those who would lead him, even to his best interests."

## CASCARA BARK.

It is said that peeling and selling cascara bark has furnished many a homesteader with the grub stake necessary to keep him going while he was getting land cleared and ready for cultivation. Fifteen years ago the bark was still plentiful and worth ten to twenty cents a pound, which meant a good profit for the bark gatherer. For the last seven years the price has been from 3½ to 6 cents per pound at Portland, so the ranchers have lost much of their interest in bark peeling, and only engage in it when nothing better is in sight.

## "COLD-PACK" CANNING.

Most Satisfactory Method of Packing  
Fruits and Vegetables in Their  
Natural State.

The five different methods of canning foodstuffs most commonly used may be classified as follows:

(1) The open kettle, or hot-pack method; (2) the intermittent, or fractional-sterilization method; (3) the cold-water method; (4) the cold-pack single period method; and (5) the vacuum-seal method.

The most popular method and the one recommended by specialists in charge of club work in the department is known as the "cold-pack." This simply means that the products are packed cold in their fresh and natural state in the glass jars or containers. To the fruits, hot sirup is applied; to the vegetables and greens, hot water and a little salt for seasoning is added. Then the sterilization is done in the jars or containers, after they are partially or entirely sealed, making it practically impossible for bacteria or spores to enter after the product has once been carefully sterilized or cooked. In following this method vegetables should first be blanched in boiling water or live steam, then quickly dipped into cold water, the skins removed, and the products cut into

TEST  
OF 21  
YEARS

The Northwest Grocery Company has been and is doing a strictly cash business with 10,000 satisfied customers. Why not you? Your mail order will receive the same careful attention as though you came in person.

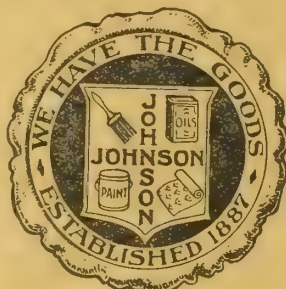
## OUR CATALOG

Gives you lowest prices on reliable Groceries. We pack and deliver to the freight depot free. Send postal today for our catalog and further information.

Northwest Grocery Co.

1302-4 Commerce  
TACOMA WASH.

## A. S. Johnson &amp; Co.



1142 C Street Tacoma, Wash.



## THE AIR-O-LITE

Gasoline Lantern, 300 candle power costs ¼¢ per hour to run, used by poultrymen farmers and for all outside purposes.

We handle repairs and supplies for Gasoline Lamps, mantels and chimneys for Aladdin Kerosene Lamps. Can be sent by parcel post. Write for prices

Ben Olson Company  
1330 Commerce St.  
Tacoma, Wash.

## KOVERALLS

Reg. U.S. Pat. Off.

## Keep Kids Kleen

The most practical, healthful, playtime garments ever invented for children 1 to 8 years of age. Made in one piece with drop back. Easily slipped on or off. Easily washed. No tight elastic bands to stop circulation. Made in blue denim, and blue and white hickory stripes for all the year round. Also lighter weight, fast-color material in dark blue, cadet blue, tan or dark red for summer wear, all appropriately trimmed with fast-color galates. Made in Dutch neck with elbow sleeves and high neck and long sleeves.

## 75c the suit

If your dealer can not supply you, we will send them, charges prepaid on receipt of price, 75c each.

A New FREE If They  
Suit  
Beware of Imitations. Look for  
the Two Horses on the Label.

Made by  
Levi Strauss & Co., San Francisco  
Awarded GRAND PRIZE at the P.P.I.E.

## Rubber Stamps

Made for every purpose. Stencils and seals. Mail orders promptly filled. Send for catalog.

## ACME STAMP WORKS

1015 A St., Tacoma, Wash.

## Choice Grades of

## Shrubs - Plants - Vines - Tress

Please let us know your needs early and get a copy of our catalog and prices.

BREITHAUP NURSERY CO.

C. F. Breithaupt Prop.  
Kennewick, Wash.

## GARMENT PATTERNS

Order by number. See description below.



1676—Girls' Dress—Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 3 yards of 44-inch material for a 6-year size. Price, 10 cents.

1668—Girls' Dress—Cut in 4 sizes: 4, 6, 8 and 10 years. It requires 3½ yards of 44-inch material for an 8-year size. Price, 10 cents.

1667—Ladies' House Dress—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6½ yards of 44-inch material for a 36-inch size. The skirt measures about 3½ yards at the lower edge. Price, 10 cents.

1670—Costume for Misses and Small Women—Cut in 3 sizes: 16, 18 and 20 years. It requires 5½ yards of 36-inch material for an 18-year size. The skirt measures about 3 yards at the lower edge. Price, 10 cents.

1371—Girls' Dress—Cut in 4 sizes: 2, 4, 6 and 8 years. It requires 2½ yards of 36-inch material for a 6 year size. Price, 10 cents.

1672—Child's Rompers—Cut in 4 sizes: 2, 4, 6 and 8 years. Size 6 years requires 2½ yards of 36-inch material. Price, 10 cents.

1662-1682—Ladies' Costume—Waist 1662, cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 3 yards of 36-inch material for a 36-inch size. Skirt 1682, cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 4½ yards of 44-inch material for a 24-inch size, which measures 3½ yards at the foot. This calls for TWO separate patterns, 10 cents FOR EACH pattern.

1535—Ladies' Over All Apron—Cut in 3 sizes: Small, medium and large. It requires 6½ yards of 36-inch material for a medium size. Price, 10 cents. About 10 day's time required.

NORTHWEST HORTICULTURIST & DAIRYMAN  
Box 1604, Tacoma, Wash.

## YOUR BISCUITS

WILL NOT FALL IF YOU USE

CRESCENT  
BAKING POWDER

With this pure  
leavener results  
are certain.

ALL  
GROCERS 1 lb. 25c

Crescent Mfg. Co.  
Seattle, Wash.



suitable sized pieces. The products are then packed in containers and sterilized. Leaflets N. R. 23, 24, 28, 33, 34, and 37 of the department contain detailed instructions and recipes.

By this "cold-pack" or cold-fill method of canning, many food product can be successfully sterilized in a single period with but one hand-

ling of the product in and out of the processing vessel. The recipes referred to apply equally well to homemade outfits as to the several types of commercial sterilizers. Practically every type of fruit jar manufactured can be successfully handled in connection with this method.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### SUGGESTIONS FOR THE PRODUCTION OF CONTEST MILK.

It has been found in examining the answers to the questions concerning the production and handling of the best samples of milk and cream entered in contests that the producers have in every case exercised great care, and that the results obtained bear out the principles which from time to time have laid down as necessary for the production of pure milk. It is not the purpose here to go into great detail regarding all methods which might be used, but a short resume of the more important things to be considered in preparing a sample of milk or cream to enter in one of these contests will be presented.

#### Bacteria.

As the bacterial count has so much weight on the score card, it will very naturally be the source of much consideration on the part of the producer. The bacterial count in samples entered in past contests has varied from below 100 to several millions per cubic centimeter. As it can be assumed that any one preparing sample for contests will exercise all the care and intelligence which he possesses, it must be concluded that at the present time many of our producers do not understand just where the bacteria come from and how their entrance into the milk can be prevented.

First of all, in the production of milk which will have a low bacterial count, it is necessary to have absolute cleanliness in every branch of the work. The barn itself and the barn air must be free from dust at the time of milking. This can be accomplished by keeping the walls, ceiling and floors scrupulously clean, and some producers just before milking time have even gone so far as to sprinkle the air in the barn, and also the bedding, with a fine spray of water to lay the dust. The cow herself is a source of very dangerous bacterial contamination. She very often carries on her skin dust, dry manure, loose hair, and other impurities, which fall into the milk pail during the process of milking. To produce milk of the highest grade it is necessary to have the cows thoroughly groomed with the currycomb and brush. Just before milking is commenced the cow's udder and flanks should either be wiped with a damp rag or the parts thoroughly washed and then dried with a clean towel, so that no water can drip from the body into the milk pail. Better results are obtained, however, if the cow's hair is slightly moist during milking. This method washes

from the cow's hide much dust and dirt which might not be removed by currying. The hands of the milker should be thoroughly cleaned, and to secure the best results he should milk dry-handed.

It has been demonstrated that a large number of the bacteria that get into the milk may be excluded by the use of a small-top pail, which protects the milk from dust and germs which may drop from the cow's body. All utensils, such as pails, strainers, bottles, dippers, etc., which come into contact with the milk, should be sterilized with either live steam or boiling water. Many dairymen make the mistake of thoroughly washing the bottle and then rinsing them with water which is only warm. This does not kill the bacteria which may be on the surface of the utensils, and considerable contamination ensues. Many competitors have been in the habit of discarding the first few streams of milk that come from each teat, for it is known that the first milk drawn contains a larger proportion of bacteria than that which follows. Milking should be done as quickly as possible and with as little agitation of the cows udder as is possible, as such a disturbance is very liable to shake bacteria from the cow's hide into the milk pail.

As milk is so easily contaminated it is necessary, as soon as drawn, to take it to a clean, convenient milk house, where it can be cooled immediately. The milk house should be well protected against flies and should be scrupulously clean. As bacteria grow very fast in warm milk, prompt cooling is an absolute necessity. Fresh milk containing 100 bacteria per cubic centimeter, if not cooled will in the course of time contain the offspring of the original bacteria which may amount to millions. In the scoring of cream it has been noticed that the bacterial count has averaged higher than that of the milk samples submitted. This may be attributable to the fact that clumps of bacteria are broken up by the force of the separator, and hence an apparently larger count is the result, or it may be caused by milk passing through one more piece of apparatus, namely, the separator, which is not always thoroughly cleaned and sterilized.

The bottles into which the product is put and the caps with which they are sealed should be sterilized so that no contamination can ensue. In cooling the milk it is not necessary that any special form of cooler be used. In fact, many of the successful competitors in the past who have obtained very low bacterial counts have believed that the expos-

Clean Skimming  
Easy Turning  
Easy Washing  
Small Repair Cost  
Best Cream Quality  
World's Highest  
Awards



## DE LAVAL

### Stands On Its Record

FOR nearly forty years the De Laval Cream Separator has led in the cream separator field. It was the pioneer in 1878. It had a long start and has always held its lead. It has always led in every step of cream separator development and popularity, and more De Laval are in use today than all other makes combined.

It has always been recognized as the closest skimming cream separator. That's the main reason why 98% of the world's creameries use it to the exclusion of all others.

Because of its cleaner skimming, ease of operation and wonderful durability, every De Laval user is a "booster" and the better its work is known in a neighborhood the more popular it becomes.

The better quality of cream it produces is attested by the fact that De Laval produced cream and butter have scored highest at every annual contest of the National Buttermakers' Association for twenty-four years and in every great representative contest for over thirty years. Last but not least, the De Laval was awarded the Grand Prize at the San Francisco Exposition in 1915 as at every other great exposition since its invention.

The creamerymen's choice can't be far wrong. The world's greatest dairymen and mechanical experts who act as judges at the great expositions can be depended upon to recognize real merit, and the fact that the De Laval is the choice of the majority of all cream separator buyers must mean a good deal to you. In your purchase of a cream separator can you afford to ignore these considerations?

Let the De Laval start saving cream for you right now. See the nearest De Laval agent at once, or if you do not know him write us direct for any desired information.

### DE LAVAL DAIRY SUPPLY COMPANY

SAN FRANCISCO

SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



### Moxee Valley Holstein Farm

There is now a rising market for good dairy cattle, but on account of spring floods here have decided to decrease our herd of

#### 40 HEAD OF LARGE TYPE HOLSTEINS

They were all tested for tuberculosis on March 28 by Dr. Robt. Prior and all proved sound. Anyone wishing stock with good records should not fail to get full particulars about this herd which is one of the best at practical dairy work in the country.

Inquiries cheerfully answered or make appointment to call and see the cattle.

### TYSON & McKELHEER

Moxee City, Wash.

### JUANITA STOCK FARM HOLSTEINS



Home of Margie Newman, the world's record cow, No. 76312, and several world record 2 year old cows. We offer for sale valuable youngsters.

12 cows of our herd have records of over 100 lbs. milk per day.

Herd bulls Duke of Deer Banks and Dukeenary Newman, son of Margie Newman.

Those wanting high record foundation stock will please correspond in call.

C. E. ELDRIDGE,  
CHIMACUM,  
WASH.

Kindly mention this paper



ure of the milk to the air in passing over a cooler was not a desirable feature, and have bottled the milk warm and cooled it with ice water. While this method does not cool the milk quite so quickly, it saves it from any possible contamination caused by exposing it in a thin sheet to the air. Bottles should be kept in ice or ice water until ready for shipment; then they should be packed in a durable shipping case surrounded with ice and forwarded without delay.—J. A. GAMBLE, U. S. Dept. A.

#### CO-OPERATIVE CREAMERIES.

The number of co-operative creameries in successful operation in the Pacific Northwest are constantly increasing. Dairymen realize more and more that for co-operative creameries correct foundations are absolutely necessary, that they are best started by a limited number of members at first, with others joining as experience may suggest, and that determination give and take attitude must apply by each individual. Under good co-operative creamery work a high quality of product is in evidence shown both in the state of Washington and in Minnesota.

In the organization of successful

Minnesota co-operative creameries three fundamental principles of co-operation are observed. These are: (1) one vote for each shareholder, regardless of the number of shares; (2) only a fair rate of interest paid on the capital stock, and (3) dividends, if any, paid on the basis of patronage, that is, pro rata on the amount of cream or milk delivered for manufacturers. Minnesota Extension Bulletin No. 42 goes on to say that "the advantage of a co-operative creamery or cheese factory are many. However, the most important point to consider is that the patrons will receive more net money by operating their own factory than they will by patronizing outside concerns. No one can deny that the co-operative creameries and cheese factories are responsible for placing thousands of dollars annually in the pockets of Minnesota dairymen which they would never get without co-operative association."

Another important advantage of a co-operative creamery, says F. M. Hillman, is that it fosters a spirit of co-operation among its members and therefore makes it easier for them to work together to improve conditions along many other lines. The value of the spirit of co-operation cannot be measured in dollars and cents.

## Thrid Semi-Annual Sale of Registered Holsteins

The third semi-annual sale of Registered Holsteins by the W. W. H. Breeder's Association at the Snohomish Fair Ground, May 3rd and 4th, was a decided success. The total sale in round figures was \$32,515, or an average of \$248, including cows, heifers, bulls and a few calves.

Several farmers figuring from former experiences came prepared to buy pure bred bull calves at prices ranging from \$50 to \$100, but they were our bid by a California market, which offered \$100 for any good calf. Farmers from Kitsap County bought several as they had been convinced from their own experience that pure bred stock showing records of high production pays far better than the ordinary common grade cow.

The top sale was a young cow consigned by the Greenbank Company, bought by Hollywood Company for \$1,275. Her sister won the 48 hour butter contest at the last Oregon State aFir over all breeds and she was a leading prize winner at San Francisco. The young bull, Sir Chimacum Wayne Cornucopial, consigned by Bishop, was taken over by H. C. Davis and some of his neighbors for \$1,050. This youngster is from breeding, with dams back on both sides of greatest milk producers in the world.

B. S. Fryar, of Sumner, and A. E. Smith, of Seattle, bought some young heifers of exceptional quality and breeding and are likely to surprise the dairy world with some phenomenal records.

Following are the consignors and buyers at this sale:

Consigned by The Greenbank Co., Seattle, Wash.

Ed. J. Stevens, Sultan, Wash., bought—Ophelia Sanesta Pauline, \$355; Oakhurst Spofford America, \$450; Josephine Canary, \$265; Pauline Artis Witkop DeKol Lady, \$415; Tiny Green of Oak Terrace, \$300; Lady Netherland Mercedes, \$255;

Cascade Violet Cornucopia 2d, \$490; Molly of Greenbank, \$310; Cornucopia DeKol Beauty, \$335.

J. W. Hollinshead, Landers, B. C., bought—Daisy Drosky Pietertje Hengerveld, \$255; Topsy Ayacanora of Greenbank, \$400.

Ed Holcomb, Snohomish, Wash., bought—Nancy Posch, \$875; Violet Blossom, \$760; Ellen Fayne, \$390.

Hollywood Farm, Bothell, Wash., bought—Lady Illustrite Fayne, \$1275.

Geo. A. Gue, North Yakima, Wash., bought—Cascade Orilla, \$250; Lilly Pontiac of Greenbank, \$195; Lady Marie Pontiac of Greenbank, \$240; Greenbank's Sir Keep On Korndyke, \$100; Greenbank's Midnight Fayne, \$100; Greenbank's Ayacanora Midnight, \$100; Greenbank's Sanesta Midnight, \$100; Greenbank's Midnight Posch, \$100.

Shadinger Bros., Snohomish, Wash., bought—Cascade Clara, \$400; Molly 2d of Greenbank, \$160.

T. G. Bowan, Snohomish, Wash., bought—Chiketa of Greenbank, \$315; Annie Lee of Greenbank, \$260.

Jno. Herberg, Seattle Wash., bought—Edna of Greenbank, \$200; Edna Ayacanora of Greenbank, \$280; Nancy Johanna of Greenbank, \$500; Florence of Greenbank, \$350.

Wm. Bishop, Chimacum, Wash., bought—Katherine of Greenbank, \$405; Jewel Ayacanora of Greenbank, \$365; Reka Lorena Ayacanora of Greenbank, \$300.

J. F. Janssen, Seattle, Wash., bought—Molly Pontiac of Greenbank, \$300; Pauline Ayacanora of Greenbank, \$210.

Mrs. A. W. Dahlquist, Sumas, Wash., bought—Jeannie Pontiac of Greenbank, \$500.

B. S. Fryar, Sumner, Wash., bought—Kate Johanna of Greenbank, \$380; Fay Pontiac Burke of Greenbank, \$650; Greenbank's Canary Pontiac, \$480.

Dr. Wm. Keller, Steilacoom, Wash.,

**Only \$2 DOWN and One Year To Pay**

**For any Size—Direct from Factory**

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

**\$24 BUYS THE NEW BUTTERFLY**

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned—Low Down Tank—Oil Bathed Ball Bearings—Easy Turning—Sanitary Frame—Open Milk and Cream Spouts.

**30 DAYS' FREE TRIAL** GUARANTEED A LIFETIME

You can have 30 days FREE TRIAL and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it along side of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal bring Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

**Albaugh-Dover Co., 2187 Marshall Blvd., Chicago, Ill.**

No. 5½ Over 75,000 now in use

## Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

## GUERNSEYS

### Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

**CHICONA FARM, Chinook, Wash.**  
A. L. Gile, Prop.

## PUGET SOUND HERD HOLSTEINS

In this herd is the world's record milk cow, and a large number of cows with famous milk and butter records. The records of our herd sires back on both sides are unsurpassed. With a very large herd of registered Holsteins we can fill orders from buyers both as to quality and price at any time.

Wm. Bishop, Prop.,

Chimacum, Wash.

**WANTED**—To hear from owner of good farm for sale. State cash price and description.

**D. F. BUSH, Minneapolis, Minn.**

### Jersey Bulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

**EDWIN PETTETT**  
Dungeness, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
**R. F. D. 1 Lynden, Wash.**

## GUERNSEYS

55 head of high grade and pure breeds everything from calves to cows and herd bulls. Will not sell a portion of herd.

**C. G. Henkel, Opportunity Wash.**

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



bought—Greenbank's Mona Pontiac, \$675.

Mr. Van Woerden, Thomas, Wash., bought—Greenbank's Ayacahora Pauline, \$105.

H. Nesbit, Chimaicum, Wash., bought—Netherland Pontiac of Greenbank, \$210; Fay Burke Pontiac of Greenbank, \$500.

J. H. Hulbert, LaConner, Wash., bought—Molly DeKol Pontiac of Greenbank, \$175; Daisy Pontiac of Greenbank, \$200.

J. R. Walthew, Olympia, Wash., bought—Greenbank's Pontiac Canary, \$135.

Consigned by William Bishop, Chimaicum, Wash.

Koorstre & Dykstre, Everett, Wash., bought—DeKol Plum, \$180.

J. W. Hollinshead, Ladners, B. C., bought—Chimaicum Sena J., \$170; Violet Fayne Pietertje, \$250; Chimaicum Lotto, \$185; Bos Pietertje Aggie, \$160; Chimaicum Star Beets, \$150; Gerben Danver, \$200; Violet Blossom Artis Cornucopia, \$500.

Tom McGee, Chimaicum, Wash., bought—Chimaicum Violet Johanna, \$160.

Ed. J. Stevens, Sultan, Wash., bought—Chimaicum Bess Nelson \$380.

J. A. Sharen, Creswell, Ore., bought—Chimaicum Clothilde Hengerveld, \$130.

J. R. Walthew, Olympia, Wash., bought—Brightside Beryl Pietertje, \$190.

R. E. Waugh, Mt. Vernon, Wash., bought—Sir Fayne Dot Cornucopia, \$105.

H. C. Davis & Co., bought—Sir Chimaicum Wayne Cornucopia, \$1050.

Alex Wheeler, Snohomish, Wash., bought—Young calf, \$115.

N. N. Baxter, Sultan, Wash., bought—Chimaicum Lilly Aaggie, \$130.

Van Woerden & Fisher, Thomas, Wash., bought—Chimaicum De Kol, \$110.

Consigned by Herman Steffen, Monroe, Wash.

Wm. Bishop, Chimaicum, Wash., bought—Katie Waldorf Girl, \$220.

J. W. Hollinshead, Ladners, B. C., bought—Hillvale Colantha Ormsby, \$200; Belle Edgly Cornucopia, \$150.

A. J. Schold, Silverdale, Wash., bought—Miss Parthena Jewel Korn-dyke, \$225.

J. R. Walthew, Olympia, Wash., bought—Susie Cornucopia DeKol Fayne, \$140.

R. C. Hill, Irondale, Wash., bought—Susie Cornucopia DeKol, \$225.

J. A. Sharen, Creswell, Ore., bought—Skykomish May, \$130.

H. Dykstra, Everett, Wash., bought—Miss Fayne Denver, \$150.

G. A. Gue, North Yakima, Wash., bought—Sir Snow Fayne Waldorf, \$100.

A. J. Lawson, Blanchard, Wash., bought—Sir Korn-dyke Fayne DeKol, \$180.

W. N. Keller, Ft. Steilacoom, Wash., bought—Sir Fayne De Kol Inka, \$105.

P. S. Govan, Sequim, Wash., bought—Miss Colantha Fayne Ormsby, \$120.

Consigned by Hugh Nesbet, Chimaicum, Wash.

J. W. Hollinshead, Ladners, B. C., bought—Johanna Etolia, \$200.

K. Dykstra, Everett, Wash., bought—Wisconsin Piebe, \$155.

Consigned by H. C. Davis, Granger, Wash.

Mrs. E. R. Sampson, Seattle, Wash., bought—Miss Pansy Fayne DeKol, \$140.

K. Dykstra, Everett, Wash., bought

—Lady Netherland of Twin Lakes Farms, \$165.

Shadinger Bros., Snohomish, Wash., bought—Queen of Wheat Hill 2d, \$105.

R. L. Rutter, Ellensburg, Wash., bought—Miss Fobes DeKol Pontiac, \$125.

Consigned by Melbrook Farm, Fall City, Wash.

J. W. Hollinshead, Ladners, B. C., bought—S. B. L. Spotford, \$150; Annie Segis DeKol, \$175; Inka Queen Susie DeKol, \$210.

Tom McGee, Chimaicum, Wash., bought—Tirania DeKol Rose, \$160.

Tom McGee, Chimaicum, bought—Model DeKol Blossom, \$225.

Consigned by A. E. Smith, Seattle, Wash.

J. R. Walthew, Olympia, Wash., bought—Pauline Clothilde Korndyke, \$240; Canary Quoque Queen 3rd, \$245; Korndyke Pride Keyes, \$155.

J. W. Hollinshead, Ladners, B. C., bought—Pietertje Ondine Lansing, \$300; Mountain View Sarcastic Beauty, \$230; Canary of Fernwood 2d, \$220.

C. R. Greaves, Silverdale, Wash., bought—Lady Oak Burke 3d, \$230.

J. H. Hulbert, LaConner, Wash., bought—Bull, \$100.

Consigned by P. S. Govan, Sequim, Wash.

M. F. Swalwell, Falls City, Wash., bought—Inka Queen Susie DeKol 2d, \$260.

N. N. Baxter, Sultan, Wash., bought—Sequim Bell DeKol, \$155.

K. Dykstra, Everett, Wash., bought—Lady Julia Eunice Paul, \$265.

Consigned by Geo. A. Gue, North Yakima, Wash.

K. Dykstra, Everett, Wash., bought—Princess DeKol Carlotta, \$150.

J. H. Hulbert, Chimaicum, Wash., bought—Inka Netherland DeKol, \$110; Mutual Piebe Queen, \$110; Brightside De Kol Hengerveld, \$110.

Tom McGee, Chimaicum, Wash., bought—Jessie De Kol Veeman, \$105.

G. E. Karb, Port Orchard, Wash., bought—Model Anna Korndyke, \$115; Polly DeKol Hengerveld, \$135.

Van Woerden & Fisher, Thomas, Wash., bought—Lady Elsie DeKol Hengerveld, \$140.

Wm. Bishop, Chimaicum, Wash., bought—Ella Jewsharp DeKol 2d, \$185.

Consigned by The LaConner Flats Stock Farm, Mt. Vernon, Wash.

Tom McGee, Chimaicum, Wash., bought—Helen Brookdale Piebe DeKol 2d, \$240; Marie Babius Pietertje De Kol, \$240.

Consigned by E. B. Marks, North Yakima, Wash.

J. R. Walthew, Olympia, Wash., bought—Model Johanna Segis Fay, \$225; Daisy Hengerveld Fobes, \$235.

R. L. Rutter, Ellensburg, Wash., bought—Rose Fobes, \$230.

Tom McGee, Chimaicum, Wash., bought, Lady Captolia Pledge, \$210.

Koorstra & Dykstra, Everett, Wash., bought—Mutual Hengerveld Piebe, \$125.

H. R. Royce, Kapowsin, Wash., bought—Female calf, \$130; Miss Mutual Fobes Mooie, \$115.

N. H. Harrison, bought—Female, \$155.

Jno. Carlson, Mannette, Wash., bought—Mooie Prilly, \$260; Fanny Fobes, \$260.

R. C. Hill, Irondale, Wash., bought—Female calf, \$155.

J. W. Hollinshead, Ladners, B. C.,

## Attention Dairymen and Stockraisers

### The Brooks Concrete Stave Silo of Washington

Do Not Buy Any Silo Until You Investigate This

Thomas E. Brooks, patentee of this Silo, has established a branch office and manufacturing plant at Seattle.

Up to December 31, 1915, 1238 of the Brooks Concrete Stave Silos had been erected and were in successful operation in the States of Michigan, Wisconsin and Minnesota.

Silos should be constructed of air-tight walls and uniform diameter to allow for free settlement. Silos that admit air or allow the liquid to escape will produce moldy silage and loss of nutriment value. Moldy and uncured silage is injurious and should not be fed.

The Brooks Concrete Stave Silo is a permanent, air-tight, water-tight and sanitary structure.

It is wind, fire, acid, rot, vermin and disease proof.

Its walls are rigid, perfectly smooth, and form a true circle.

It does not shrink, swell or warp as the expansion and contraction of the steel and concrete are the same.

There is no expense or annoyance in tightening hoops, painting, repairing or rebuilding.

The vital test of all silos should be permanency, the percentage of cure and succulence of the silage which, to you, represents the increase in volume and butter fat of your milk and the tissue muscle and bonebuilding of your herd after feeding.

The Brooks Patented Concrete Stave Silo when erected is glazed inside with an acid proof cement grout, making it air and water tight by filling the inner voids and joints only, allowing normal outside atmospheric conditions to prevail up to a fraction of an inch of the silage, thus preventing the absorption of heat and liquid which is so necessary to insure a perfect cure of the silage.

If you contemplate the erection of a Silo, you should write at once for free descriptive matter to the

### Brooks Concrete Stave Silo Co.

515 HOGE BUILDING,

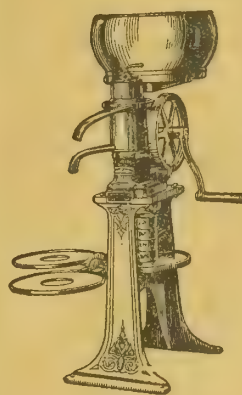
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First, simple and durable.

Second, the closest skimmer.

Third, easy to run.

Fourth, it has a self-balancing bowl, absolutely guaranteed not to get out of balance during the entire life of the machine.

Fifth, the greatest of all oiling systems.

Sixth, reports of what users say about this separator.

## Northwest Creamery Supply Co.

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Barn Equipment, Dairy, Creamery and Cheese Factory Supplies. Distributor Creamery Package Goods. Catalogue on Request.

## Waikiki Farm

Breeders of

JERSEY and AYRSH RE CATTLE  
DURC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.



bought—Female calf, \$195.

C. L. Morris, Seattle, Wash., bought—Chief Fobes, \$255.

H. Dykstra bought—Edna Beauty Fobes, \$205.

M. F. Swalwell—Pearl Pietertje Fobes, \$265.

### LUTSKE VALE CORNUCOPIA.

In January, 1909, I went East to purchase a car load of Holstein stock and visited many of the large herds, finally purchasing 12 head from Mr. M. S. Nye, of Preble, N. Y., of which the last to pick out was 2 young heifers, one of which was Lutske Vale Cornucopia No. 110505, she being 15 months old at that time. After my selection Mr. Nye said that she was the best buy of the lot and she should make a good cow some day.

The following fall she was exhibited at the A. Y. P. Fair in Seattle and won 2d as a Senior Yearling, and was one of the four that won first for get of sire at the same fair.

She was not tested at her first calving, but as a Junior 3-year-old she made 16.75 pounds butter and 409.8 pounds milk; as a Junior 4-year-old made 17.53 pounds butter and 415.6 pounds milk; at 5 years old made 23.81 pounds butter and 655.9 pounds milk in 7 days and in 30 days 98.34 pounds butter and 2924.2 pounds milk, her best day's milk being 112.3 pounds milk. At 6 years old she had a bad attack of milk fever, so was not tested. She is a very persistent milker; this lactation period was the first time she was dry since her first calving and it was but 6 weeks, so at that time we thought if she would have good luck calving we might beat the world's milk record for 1, 7 and 30 days.

At 7 years and 5 months of age she dropped large twin bull calves the 11th of May, 1915. She was put in test on the 4th day after calving and gave 86.4 pounds milk and kept increasing until she reached the 119.7 pound mark. Her first 60 days was strictly official, her total was 6671.4 pounds milk, 209.35 pounds butter; her best 7 days milk is 813.7 pounds. For the first 180 days she averaged over 100 pounds milk per day. Up to and including May 7th, which gives her 4 days more to finish the year, she has produced 31026.9 pounds milk or a ten gallon can of milk every day in the year. Practically one-third of the year's test has been official.

During the entire year the weather was against her, as we had very little pasture, with a long dry summer, and the winter was one of the coldest we have had for 35 years to end up her year's work, we had a very late, cold, backward spring.

A glance at her breeding will readily see why she made this wonderful record, as she is a daughter of the world noted sire, Aaggie Cornucopia Johanna Lad, Jr., No. 36974, who has sired one or two other daughters that have made world's records, also is the sire of 15 other daughters that have records averaging over 100 pounds milk per day.—WILLIAM BISHOP, Chimacum, Wash.

### THE CALF.

Pure bred, six months old calves have been sold for from \$100 to over \$500 each at public sales in the Pacific Northwest. They had high

parental records but they were also given proper feed and shelter. Get good producing stock; the cost of raising is about the same as for common grade. Start on 8 to 10 pounds milk per day, feeding 3 times a day for the first two weeks and gradually increase the amount of milk at the rate of one-half pound at a time.

Feed the milk at 95 to 100 degrees warm. J. N. Price, dairy extension specialist, cautions against feeding milk cold as it is injurious.

It is best to feed sweet milk, but it is better to have sour milk all the time than to be changing from sweet to sour. If separator skim milk is fed it should stand long enough after separation to allow all the foam to rise to the surface and be skimmed off.

As soon as the calf is changed to skim milk it should receive some grain. Any of the common farm grains, rolled or ground, will give good results. Feed grains dry and after the milk is drunk. Keep some clean bright hay where the calf can get it as desired. It will begin to eat hay about as soon as grain.

The feeding pails should be kept clean. Rinse them after each feed and scald them often. Do not allow them to remain in the stall from one feeding time to another. Keep the stalls clean. If an outbreak of scours occurs, all stables should be cleaned, disinfected and bedded with clean bedding. One teaspoonful to one tablespoonful of dried blood in each feed will help to prevent scours and is especially good for weak calves.

Give the calf all the clean water it will drink after the first few days. As soon as it will eat it give him a little salt every day or two.

### WORLD'S TWO-YEAR MILK RECORD.

Tillie Alcarta, a Holstein cow owned by A. W. Morris & Son, Woodland, California, has completed a two years' milk record of 60,278 pounds, said to be the world's record for a two year period.

### AYRSHIRE CHAMPIONS.

The Senior four-year-old, August Lassie 29581, A. R. 1429, bred and owned by L. A. Reymann Estate, Wheeling, West Virginia, has just closed her year of official testing, with a record of 17,784 pounds milk, 720.03 pounds fat, 840 pounds butter, 4.05 per cent fat, which place her the World's Champion in her class.

The Junior two-year-old, Willowmoor Etta 3d 35833, A. R. 1691, bred and owned by J. W. Clise, Redmond, Washington, has just closed her year of official testing, with a record of 16,621 pounds milk, 666.06 pounds fat, 784 pounds butter, 4.01 per cent fat, which places her the World's Champion Junior two-year-old.

C. M. WINSLOW,  
Secretary Ayrshire Breeders' Assn.  
Brandon, Vt.

### ANOTHER JERSEY BUTTER RECORD.

Sadie's Crown Princess 224307 completed a year's record of 16,578.4 pounds of milk, 876.7 pounds of fat, or 1031.5 pounds of 85 per cent butter. "Sadie's" record is ranked as tenth in butter-fat and ninth in milk production in the Jersey breed. This latest record gives the "Wolverine

## Heavy Yeilding Registered Holsteins Pontiac and Dekol Breeding

There is now a growing demand for young sires with good production records back on both sides. Our registered herd has been bred for years with heavy dairy work in view, which includes health, large body for converting feed into milk and butter-fat, and deep milking capacity. A large part of our herd is in the A. R. O. class, producing up to and over 100 pounds milk a day.

We are offering some good mature cows, as well as youngsters and will be glad to give full particulars to any inquiry.

The prices bidders at the sales have made when taking over our stock is a practical endorsement of our method, for there is satisfaction both to the buyer and seller.

At private sale you can make your own selections from some of the young cows which we offer, either by personal inspection or through correspondence.

Some of our young bulls should be used by dairymen to grade up their herds, for they are the result of careful breeding for generations and will increase the productive capacity of the next generation of cows. Health is guaranteed, and the prices right. In fact, our young sires are sold much below their actual value.

We are in position to assure satisfaction and will be pleased to hear from prospective buyers.

## A. E. SMITH CO., Sumas, Wash.

(or White Building Seattle)

Please mention this paper when writing.



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.



### The Book of Dairy Books

It's the book, because it's the authority on the breed—the beautiful, ever-paying Jersey.

This book, "About Jersey Cattle," goes way back to the beginning of the breed, shows how it was line bred and protected from mixture by law, and shows why it has developed into the most economic and most persistent milking of all breeds. It gives tests, yields, etc., proving that the Jersey is the money cow—the "Giant of the Dairy."

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**The American Jersey Cattle Club**  
West 23rd Street, New York City

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

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IN CATTLE. DON'T DESTROY YOUR ANIMALS. RESTORE AND PROTECT THEM WITH KAR-NITUM. WRITE US NOW. Kar-Ru Chemical Co., Tacoma, Wash.



### FOR SALE Guernsey Bulls

Strongly bred from highly testing ancestors. Write for particulars  
**PLATEAU FARM**  
VASHON, WASH.  
S. M. SHIPLEY, Proprietor,  
Haller Bldg. Seattle

### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.

### HOLSTEIN BULLS

Out of my cow Lunde Oregon Fine, 108 lbs. milk one day, 20,200 lbs. a year, 3.8 per cent fat. Their sires have high record dams. Age 7 months. Price on application.

**MOUNTAIN VIEW FARM**  
Mt. Vernon, Wash.

Otto Rundgren, Prop.

### THREE JERSEY HEIFERS

Average age fifteen months, not bred Sire and dams all in Register of Merit. All three are granddaughters of Emineah and extra good individuals. Price \$350, or will sell separately.

David C. Dilworth Buckeye, Wash.



State" two cows in the first ten producers of the breed.

Sadie's Crown Princess was bred by her present owner, Mr. H. F. Probert, of Jackson, Mich.—AMERICAN JERSEY CATTLE CLUB, 324 West 23d St., New York.

### DAIRYMEN ORGANIZING.

The dairymen supplying milk to the City of Tacoma are organizing to co-operate with the authorities for a higher standard quality of milk and to meet the increased expense in producing a clean, nutritious product. They will make the price to consumers of bottled milk at 12 quarts for \$1.00, or sell at a higher price, according to the degree of quality. The aim of the association is to work for a strictly cash basis, minimize the loss in bottles and to institute as soon as possible a central system of distribution, avoiding duplication of deliveries, thus reducing the cost between the producer and consumer. Thus they figure on a living profit margin for themselves and to give a higher measure of satisfaction to consumers.



Mr. W. R. White, Sunnyside, Washington, breeder of Holstein cattle and Duroc Jersey Swine, has found from practical experience that corn silage with alfalfa makes a balanced ration for the dairy cow, and that it has greatly reduced the cost of producing milk. The silo on this place is a Weyerhaeuser, 12x30 feet, which has preserved the feed in good shape.



A good Jersey dairy herd, the commodious barn and Weyerhaeuser silo make a combination which produces the best of satisfaction on the farm of S. B. Ragsdale, Grandview, Wash.

### WALLA WALLA VALLEY COW TESTING ASSN.

#### RESULTS OF APRIL TEST.

O. V. Patton, County Agent, U. S. Department of Agriculture.

The Association has just completed six months' work and already ten per cent of the cows which were started in the testing have been weeded out, and either sold to the butcher or slaughtered. Three new members joined the association this month—Mr. J. L. Reavis, Mr. O. C. Stetson and Mr. A. I. Braden. Members of the association are showing a decided

interest in improving the quality of their animals and have purchased nine excellent pure bred bulls since the testing was started.

One member by weeding out and adding six more cows to his herd has the following excellent showing to his credit:

|                | Average Milk per Cow. | Average Butterfat per Cow. |
|----------------|-----------------------|----------------------------|
| November ..... | 409 lbs.              | 18.1 lbs.                  |
| December ..... | 318 lbs.              | 14.3 lbs.                  |
| January .....  | 410 lbs.              | 20.0 lbs.                  |
| February ..... | 717 lbs.              | 33.7 lbs.                  |
| March .....    | 889 lbs.              | 34.2 lbs.                  |
| April .....    | 839 lbs.              | 42.2 lbs.                  |

Reports for the month of April just completed by the tester, Mr. Lee C. Lewis, show the greatest number of cows on the "Honor List" of any previous month. Highland Dora Vee-man, a registered Holstein, of the Walla Walla College, again leads the list with 77.5 pounds of butterfat for the month. She has produced 436.3 pounds of butterfat in less than six months.

The 51 cows on the honor list this month comprise nearly 11 per cent. of the total number of cows in the association, and produced 22.4 per cent. of the total butterfat, 23.3 per cent. of the total milk, and 27.7 per cent. of the total profit above cost of feed.

A comparison of the average of these 51 cows with the average of the balance of the cows shows some interesting figures:

Average of 51 honor cows—Milk production, 1107 lbs.; butterfat, 48.2 lbs.; test of milk, 4.3%; feed cost, \$4.64; profit above feed cost, \$10.90; feed cost for 100 lbs. of milk, 41.9c; feed cost for 1 lb. of butterfat, 9.7c.

Average of balance of cows—Milk production, 537 lbs.; butterfat, 24.1 lbs.; test of milk, 4.5%; feed cost, \$3.67; profit above feed cost, \$4.19; feed cost for 100 lbs. of milk, 68.3c; feed cost for 1 lb. of butterfat, 15.2c.

In the Roll of Honor List of cows producing more than 40 pounds of butterfat during April, besides the Holstein above mentioned, the owners of those giving between 60 and 70 lbs. are: Walla Walla College, John M. Blue, Penitentiary and R. H. Wellman.

Those having cows between the 50 and 60-pound mark are: John M. Blue, Walla Walla College, Penitentiary, Chas. Baker and Mrs. M. E. Lowden.

Those with cows between the 40 and 50-pound mark are: V. E. Brown, Wm. Reser, D. O. Saunders, Penitentiary, C. M. Dyer, John M. Blue, Walla Walla College, Mrs. M. E. Lowden, O. C. Plaquet, J. E. Jones, E. S. Green, Coyle Brothers, Hodgen Brothers and Russel Brothers.

### THE CHEESE MARKET.

The cheese market has been very satisfactory during the past year and some of the creameries are planning to add cheese making equipments to their plants. When the butter market is weak conditions could be improved by turning some of the surplus into cheese. So long as the cheese represents cash at a high rate for butter fat well and good. But when it comes to storing cash advances are as easily obtained for a good quality of cheese as for a high grade butter and the dairymen of the Pacific Northwest are making preparations to get the full benefit of the markets along this line. The

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## EGGS EGGS EGGS

Ship your eggs to us also your cream and receive prompt cash returns.

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Also \$2.50 book on curing meats free with each \$10 order.

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## Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM

Box 34, Milltown, Wash.

exporting cheese agents are buying in Wisconsin, where a large amount is produced.

A recent market report states there is considerable inquiry for Cheddars, either white or colored, but of this heavy style there seems to be no amount available. Colored Twins sold recently from 16 @ 16½c, according to quality and location, the freight rates naturally making a difference. Whites would not bring over 16c, as a rule. The sluggish market on Twins earlier in the spring had turned many factories from Twins to the smaller styles, and the amount of Twins made in the state is not large. If, however, the present activity continues, and the prices are close to those paid for the smaller styles, there will soon be a return to the larger makes, which factories generally prefer.

Home trading has been fair, but not particularly active. Twins will not bring over 16c in the home markets. Daisies are in good demand and are selling freely at 16½ @ 16¾c. Longhorns are also selling quite freely at 16¼ @ 16½c, and the receipts of the week are easily turned. Young Americas continue more or less sluggish and can only be turned at a close margin. The offerings of America are, however, rapidly decreasing and it may be that as soon as a little demand comes on there will again be a shortage.

### FERMENTED MILK.

The demand for lactic-acid milk, usually in the form of butter milk, is increasing. Bulletin 319 of the U. S. Department of Agriculture gives available knowledge on subject of fermented milks briefly summarized. A perfect substitute for buttermilk can be obtained without making butter.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor

Montesano, Wash.

Registered

## Poland China Pigs

out of large litters from big prolific sows and a big well bred sire. Some February pigs that are fine. Prices reasonable and satisfaction guaranteed.

ROY MINTER,

Castle Rock,

Wash.

WANTED—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

Prices

For Ten Cows, Size 10x17½ in.

6 Sheets for \$ .25, Postpaid

15 Sheets for \$ .50, Postpaid

25 Sheets for \$ .75, Postpaid

50 Sheets for \$1.25, Postpaid

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This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.



Chemically, buttermilk differs but little from skimmed milk. If the latter is soured and then thoroughly agitated in order to break up the curd, it has the appearance and flavor of buttermilk that is obtained by churning cream. The milk may be left 'o sour of itself, but in this case other changes than those caused by the desired action of the lactic-acid-forming bacteria may take place. It is advisable, therefore, to assist and to some extent control the process of souring by what is known to butter makers as a "mother starter."

To obtain a "mother starter" at home, milk from several sources should be collected and a pint sample of each put into clean glass jars or bottles and allowed to stand until the milk curdles. When this change has taken place an equal number of bottles should be filled with fresh milk and held in steam or boiling water for half an hour in order to sterilize them. When this fresh milk is cooled a teaspoonful from each of the bottles of the curdled milk should be added and the fresh milk allowed to curdle in its turn. This process should be repeated until a sample has been obtained which curdles in at least 8 to 10 hours, has a smooth curd that is free from whey and gas bubbles, and has a pleasant, acid taste.

Such a sample constitutes a satisfactory "mother starter." A teaspoonful of it should be added to a quart of skimmed milk which has been heated for at least a half hour in a double boiler and then allowed to cool to about 75 or 80 degrees F. After the addition of the mother starter the milk should be kept in a warm place until the following day, when the bottle should be thoroughly shaken in order to break up the curd; the finished product then should be put on ice. A teaspoonful of this freshly curdled milk may be used as a "mother starter" to inoculate more milk.

### RAISING THE MILK STANDARD.

The Department of Health of New York City intends very shortly to enforce an order which will not permit milk to be sold in New York City which contains less than 8.5 per cent of solids not fat. The milk companies supplying New York City have been bringing this rule to the notice of milk raisers, and they have been pointing out to them the supreme importance of taking such steps to improve the quality of their herds as will insure that the average solids not fat will meet the requirements of the Department.

There is only one way by which this can be accomplished, and that is by using cows whose milk will test higher than the average of the animals now being kept. The breeds of milch cows whose milk tests high in butter-fat, test correspondingly high in solids not fat. The average percentage of fat in the milk of Jersey cows has been shown by the records of 4,297 cows, tested for one year under the authority of the State Agricultural Experiment Stations, to be 5.34. In a table issued by the United States Bureau of Animal Industry the composition of Jersey milk is given as 9.16 per cent solids not fat, and 4.956 per cent fat, making 14.11 per cent total solids. The composition of Holstein milk is given at 8.27 per cent solids not fat

and 3.08 fat, making 11.33 per cent total solids.

The action taken by the New York Health Department is solely in the interests of the consumers of milk. The consuming public is becoming very much alive to the comparative nutritive values of the different grades of milk. This is one of the measures which will force farmers to organize to better net profits to themselves.

### COW TESTING.

#### Improvements at Montesano.

During March 37 cows in the Montesano Association went above the 40-pound butter fat record for the month, and 14 heifers produced over 30 pounds butter fat. All the cows except three had silage, showing the importance of succulent feed up to the time when pasture is available.

Mr. E. L. Brewer had 5 cows heading the list, the best producer being Emanon's Anne West, with a record of 71.7 pounds. Mr. J. H. Taylor showed several good producers, his best reaching 59.1 pound fat. Following these were the cows of Oscar Smith, Murphy Bros., A. M. Valentine, G. C. Collett, Parker Askew, A. H. Arland, A. P. Stockwell, Wm. Polson and W. J. Wharton, ranging in production from 55.8 pounds down to 40.

Better weather and better feed has made a difference in yield of the cows in this association. The cows below the 40-pound mark still in the majority, are gradually being "spotted" for the butcher. A few of the most promising will be bred to sires with good records with the hope of getting heifer calves which will yield more than the 40 pounds of fat in 30 days. There is a plain evidence on the part of dairymen to buy registered sires with records of high merit. They are beginning to realize that by improving their herds for greater production at the same time reducing the cost of feed that their profit margin will be increased.

### ANOTHER JERSEY AT TOP.

Successful Queen, a 4-year-old Jersey cow in the Hood Farm Herd, has produced 1003 pounds, 3 ounces of 85 per cent butter in one year, being the highest producer of fat in this class and her milk record for the year is 16389.3, also the highest in her class of the breed.

### COW TESTING.

#### By the Lewis County Association.

The registered Holstein cow Otsega, owned by Nathan Hamilton, continues to hold the highest production mark in this association, her April record being 72.37 lbs. fat. The Jersey cow Blossom of the Grasmere company was a close second, her record being 67.54 lbs. fat.

A grade Jersey belonging to Lloyd Owen reached the high mark of 65.22 lbs. fat for the month.

The owners of others whose records of fat ranged between 50 and 60 lbs. were: Ed. W. Klaus, E. M. Moses, Albert Hamilton, Albert Anderson, Grasmere Company, Chas. Gessell, and A. Wachterbarth. Owners of cows producing between 40 and 50 lbs. of fat for the month were: P. H. Thompson, Herman Young, C. A. Giblin, J. C. Bush and Mrs. J. B. Gregg. Some of the cows ranking low in this list are well along in the lactation period.

The fact of only 27 cows going



### CEDAR BEE HIVES

More durable and lighter than pine; will last longer, exposed to weather with or without paint, than any other hive made. - Bees work as well in cedar as any other wood. Cedar does not swell or shrink. The quality of our workmanship and accuracy of our milling pleases our customers.

Prices are lower than for pine hives. Write today for our bee hive booklet.

We manufacture all kinds of fruit boxes and baskets.

BREW MFG. CO.  
Puyallup, Wash.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

### PACIFIC COLD STORAGE CO.

N. P. Wharf, Tacoma, Wash.

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously

### YOUR FRUIT, POULTRY AND EGGS

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation.

923-5 Railroad Avenue,

CHAS. UHLEN,

Spokane, Wash.

into the honor list out of several hundred in this association shows that more than 75 per cent. of the cows in Lewis county are not nearly so profitable as they should or could be. In part this may be due to improper methods of feeding, but there is no doubt there is a lack of producing capacity on the part of the cows. A change can come about by using sires of known producing records and that means registered stock. At the Holstein sale, Snohomish, recently, young bulls were sold at prices ranging from \$100 to \$125 each that would have been worth several times that sum in any dairy herd where the butter fat record per cow falls below 40 lbs. per month.

The same may be said of the good Jersey bulls offered at the Burt Pease sale, Ellensburg, for those who prefer this breed. Advertisers in this paper, including Holsteins, Guernseys and Jerseys, can supply young sires at most any time, at prices below their real value. These testing associations are eye-openers to the thinking farmers. Those who plan intelligently to increase the capacity of their cows, to give their herds proper care in the way of shelter and feed are finding a feasible way to finance their efforts. During the next five years the dairymen of Lewis county will make great strides towards a top mark in the dairy industry.

## HIDES

WOOLS - PELTS  
FURS - TALLOW

HIGHEST CASH PRICES PAID  
PROMPT RETURNS—HONEST  
WEIGHT

WRITE FOR PRICE LIST AND  
SHIPPING TAGS

Hibbard-Stewart Co Inc. Seattle  
Please Mention This Paper

### Buy a HAMPSHIRE if you want a HOG

In 1904 there were less than 25 breeders of Hampshire hogs in the world. Today there are over 10,400 registered herds in the U. S. alone. Others like them, so will you. We can supply you.

HIGHLAND FARM,

Box 56

Underwood, Wash.

## "Carco" KILLS MAGGOTS

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers, who are highly pleased with results.

### SOME OF OUR PRODUCTS

Fish Oil Soap Lice and Mite Liquid  
Fly Chaser Carbolineum  
Creosote Crude Carbolic  
Disinfectants Wood Preserving  
Materials

For Sale By All Leading Seed Houses  
On Pacific Coast. Ask For It.

Manufactured ONLY by

Standard Chemical Company

TACOMA, WASH.

(Send for Circular)

## RIDGEVIEW FARM

### DUROC JERSEY HOGS

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

## Berkshire Pigs For Sale

Boar Pig's

Sired by the celebrated boar Laurel Champion Farrow Dec. 1915 Extra choice and gurranteed.

Write for Prices

Avalon Stock Farm

Dockton, Wash.



SILVER BIRCH FARM  
BERKSHIRES  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3 NEWPORT, W.N.

## AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

North Yakima.

Wash.



**THIRD HOLSTEIN SALE.**

The registered Holsteins sold for an average of about \$248 at the 3rd annual sale of Western Washington H. B. Association at Snohomish, which is an indication of a rising market for good dairy cattle. Two animals of outstanding merit brought fancy prices and with that exception the balance of about 138 head were bought for their actual value in the dairy herd.

A considerable number of dairymen not present at previous sales were in evidence and made some good purchases. The Pacific Northwest is coming to the front very rapidly as a dairy section and there is a good race taking place to determine what dairymen will have their entire herd in the honor list of more than 40 pounds butter fat per month, first.

This Holstein breeders association is keeping up its reputation for quality of stock offered in the sale ring and buyers are showing confidence by the prices paid, not only at the sale but by subsequent purchases made from the individual breeders.

Mr. H. F. Rau, Tacoma, is raising some Leghorns from imported English stock which are larger in size than the native.

His trade for day old chicks has been very satisfactory this spring. Orders are coming in and will be filled through the month of May.

**GROWING CHICKS.**

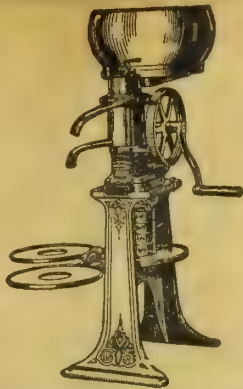
Growing, that is the business of the young chick and be sure to keep him at it.

Hellen Dow Whitaker, of the State College, states that under-feeding is less harmful than lack of water which should be supplied, pure and freely.

A good growing ration for the first three weeks of a chicks life may be made up as follows: Of cracked wheat or bread crumbs and rolled or steel cut oats, feed equal parts by weight. With every ten pounds of bran mix one pound of beef scrap and one pound of granulated bone for the first mash to be fed dry after the eighth day. Chicks may eat an excess of bran, which is rather bulky for the nourishment it contains. Use judgment in not letting them keep their crops crammed uncomfortably full of dry bran mash all day long. Note that the beef scrap should be sifted through a screen (fly-size) and only the finer portion used for the youngest chicks. Also note that the granulated bone is pretty nearly a necessity for closely yarded chicks, carrying, as it does, about 25 per cent of protein and 50 per cent of lime. Furthermore, it contains 24 per cent of phosphoric acid, and we are coming to believe the phosphates play an important part in digestion, and hence nutrition.

**EGG PRESERVING RECIPES.**

"Water-glass (sodium silicate) may be bought from any druggist for 25 or 30 cents a quart, and a quart will preserve 20 dozen eggs. Boil ten or 12 quarts of water and let it cool. Then add a quart of water-glass and mix thoroughly. The mixture should be kept in a stone jar in a cellar or other cool place, the eggs placed in it each day as soon as they are brought from the nest. Do not put in dirty eggs nor eggs that have been

**ANKER  
HOLTH****THE LEADER  
OF ALL  
CREAM  
SEPARATORS**

Why! Because it is the latest invention and has so many improvements and features the others do not have. **Don't fail to see how simple it is;** be sure to see its construction. **Don't fail to get its record as the closest skimmer.** **Don't fail to see how easy it runs.** **Don't fail to see that new feature, the Self Balancing Bowl.** **Don't fail to see the greatest of all oiling systems.** **Don't fail to get reports of what users say about it.** Write us for catalog on the Perfection Milker, the latest invention, the nearest like hand milking.

**THE J. C. ROBINSON CO.**  
43 First St., Portland, Oregon

**Salmon Faverolls**

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

**Island Nurseries & Fruit Farm**  
S. J. Harmeling & Son,  
Vashon, Wash.

**KRESKY BROODER STOVES  
JUBILEE INCUBATORS**

Poultry Supplies and Remedies  
**DAY OLD CHICKS**

From fine laying strains of Barred Rocks, S. C. Reds and White Leghorns, and eggs by the setting or thousand. For particulars write

**JOHN L. CRAIB**  
1022 Western Avenue, SEATTLE

**WILD AND BRONZE TURKEYS**  
Reduced prices on all eggs.  
**E. Y. SANDERS - - Roy, Wash.**

**WYANDOTTES**—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in Southwest and only complete family of Wyandottes known. Eleven varieties and each from finest strain bred in United States. Write for full particulars.

**VILLA WYANDOTTE FARM,**  
Villa Road, Lamanda Park, Cal.

washed. The liquid should cover every egg completely.

"When eggs that have been in a water-glass solution are to be boiled, pricking a hole with a pin in the large end of the egg will keep it from cracking."

Other methods of preservation, though less satisfactory in their results, will keep eggs for from three to four months in such condition that they may be used for cooking purposes. A preserving mixture which has given fair results is made up of three and one-half pounds of fresh lime mixed with four and three-quarter pounds of salt, and the whole dissolved in eight gallons of water.

Eggs may also be preserved fairly well for a few months by packing dry in a mixture of equal parts salt and sawdust.

**PUGET SOUND HERD HOLSTEINS**

Production as well as Individuality  
Home of the Worlds Record Milch Cow

|                                            | One year<br>Butter. | One year<br>Milk. |
|--------------------------------------------|---------------------|-------------------|
| Lutscke Vale Cornucopia .....              | 998.6               | 31,239.2          |
| Gettie De Kol .....                        | 1,082.4             | 23,471.9          |
| Chimacum Wayne Boon 2d, 2-year-old .....   | 882.2               | 21,581.1          |
| Sena De Kol Ononis, 3-year-old .....       | 846.2               | 20,572.9          |
| Forum Quirinus Gold Leaf, 2-year-old ..... | 747.7               | 17,637.7          |

This is a sample of a few of our yearly records. Young stock for sale.

**WM. BISHOP, Chimacum, Wash.**

**FROM THE YOUNG CHICK  
TO THE STURDY HEN**

—is only a short period of growth. Different rations are required during the stages of development. Albers "Progressive" Poultry Foods properly meet this demand.

Right now, poultry raisers need a generous supply of

**Albers**

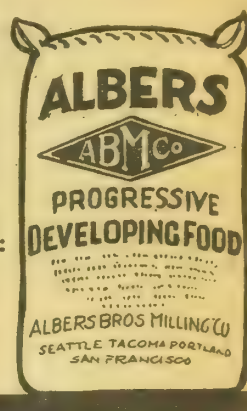
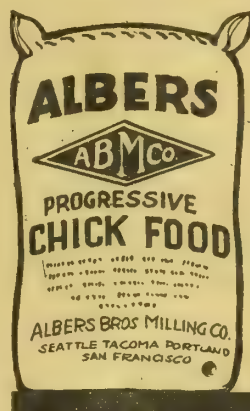
**"Progressive" Chick Food and  
Chick Developer.**

Chick Food should be fed from three days after hatching, until six weeks. Then a ration of Developing Food. At the developing stage, feed to supply rapid growth in bone, flesh and feathers is needed. The productiveness of your

stock depends on the correct body-building at this period. "Progressive" Developing Food is high in Protein for this purpose. Albers "Progressive" Poultry Foods are composed of clean grains—no grit or shell. Ask your dealer for Albers "Progressive" Poultry Foods or write us direct, giving your dealer's name. We will see that you are supplied.

**Albers Bros. Milling Co.**

Largest Poultry and Stock Food  
Manufacturers in the West.  
Portland Seattle Tacoma  
San Francisco Los Angeles

**Kenworthy's A-ONE<sup>C</sup> Chick Starter  
Chick Food**

It Gives Satisfactory Results.  
**W. H. KENWORTHY & SON**

Manufactured By  
**South Tacoma, Wash.**

**Baby Chicks  
FROM THE Oak Heights Strain**

S. C. White Leghorns that are well hatched, from strong, hardy stock, bred for Eggs, Vigor, Size. Price \$10.00 per 100.

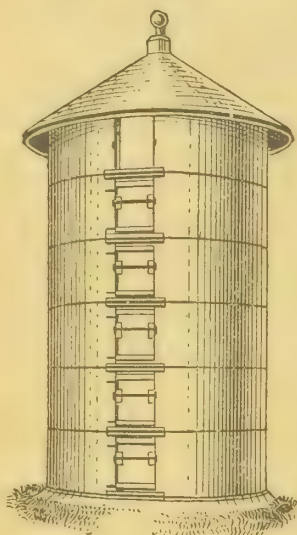
March 24, 1916—"I received the 1000 chicks in excellent condition. They landed here in a snowstorm." March 27, 1916—"Chicks are doing fine."—C. H. Torrence, Billings, Montana.

I guarantee safe arrival to you in good condition all chicks you order, and send you free my book "Raising the Chicks." Send me your order or inquiry now. My catalog is free.

**OAK HEIGHTS POULTRY FARM**  
R. D. 3, Box 67 A, Tacoma, Wash.  
**CAPT. A. WALDWICK, Proprietor**



# Corn for Ensilage



## of Course!

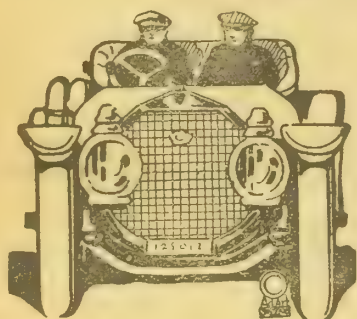
Specially acclimated for Western conditions. We strongly recommend the following varieties because they have made good.

WASHINGTON GOLDEN NUGGET -- WASHINGTON SILVER KING

We will also be pleased to supply you with all the other popular Northern grown varieties. Dealers sell LILLY'S Seed Corn. Write for samples.

LILLY'S - SEATTLE and PORTLAND

Tear Out This Ad. for Future Reference



**IF YOU INTEND TO BUY  
AN AUTO, MOTOR TRUCK  
OR GAS ENGINE KEEP THIS IN  
MIND WE CARRY THE FINEST  
LINES AND CAN GIVE THE  
BEST VALUE FOR THE MONEY**

We Sell on Terms

## LEXINGTON 6

116-in. wheel base, 45 H. P., 32x4-in. tires, Westinghouse starting and lighting, over-size headlights, engine-driven tire pump, very complete equipment; a beautiful, sturdy and economical car. Write for catalog. \$1075 f. o. b. factory.

## THE ALLEN 4

112-in. wheel base, 37 H. P., 32x3½-in. tires, Westinghouse starting and lighting, and Stromburg carburetor; a classy, well-built, up-to-the-minute car, complete in every detail. \$795 f. o. b. factory.

Write for complete specifications.

### Used CAR AND TRUCK DEPARTMENT

|                  |        |
|------------------|--------|
| Light Roadster   | \$295  |
| 1913 Studebaker  | \$265  |
| 1916 Metz        | \$195  |
| 1911 Ford        | \$235  |
| 1912 Stoddard-D. | \$550  |
| 1915 Allen       | \$575  |
| 1914 Reo         | \$485  |
| ½-ton Vim Trk    | \$275  |
| ½-ton Pope Trk   | \$275  |
| 1-ton Gram Trk   | \$600  |
| 1-ton Repub Trk  | \$650  |
| 2-ton Gram Trk   | \$1200 |

Series of other Car and Truck bargains.  
Write for Lists

### The Famous REPUBLIC TRUCKS

Internal Gear Drive

|                      |        |
|----------------------|--------|
| ½ to 1 ton capacity  | \$785  |
| ¾ to 1½ ton capacity | \$995  |
| 1 to 2 ton capacity  | \$1295 |
| 2 to 4 ton capacity  | \$1675 |
| 3 to 6 ton capacity  | \$2450 |

P. O. B. Factory

In this line of Trucks as with our Touring Cars we offer the best value the market affords at prices that are right.

Write for Details  
Dealers Wanted

### GAS ENGINE AND BOAT DEPARTMENT

Stationary Gas Engines of every size for every purpose.

We install pumping plants and lighting systems.

Marine Engines and Boats of every size and kind.

Write Your Wants

## STANDARD MOTOR COMPANY

W. L. Kirby, Manager

740-742 Commerce St.

Tacoma, Wash.

## The Scandinavian American Bank

OF TACOMA, WASHINGTON

With Assets of

**\$2,800,000**

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

**You can do your banking by mail**

## Leghorns

White  
Brown  
Buff

Also  
SILVER CAMPINES

Eggs for hatching stock and baby chicks. Our fowls are heavy layers. We practice Hogan system. Write for prices.

**MILLER BROS.**

Box 173,  
Fern Hill Sta., Tacoma, Wash.

The Walnut Book is a new, neatly printed publication in booklet form, published at Orenco, Oregon, at \$1 per year. It is devoted to the promotion of the walnut industry, both cultivation and marketing. We will send it to any new or old subscriber, together with one year's subscription credit for the Northwest Horticulturist and Dairyman on receipt of \$1. Address Box 1604, Tacoma, Wash.

## BABY CHICKS

**8c** from pure bred heavy laying White Leghorns. Satisfaction and safe arrival guaranteed. Hatching eggs, 15 for \$1.00; 100, \$5.00.

**THE QUIVIRA FARM,**  
Black Diamond, Wash.



**To SAVE LITTLE CHICKS**  
and help them to grow into big, strong, healthy birds, **FEED**

## Diamond Chick Food

Our name and trade mark on every original package.

Beware of Imitations

## POULTRY SUPPLIES

Our 1916 Catalog of "Diamond Quality" POULTRY SUPPLIES, listing everything necessary for the profitable production of poultry

Mailed Free

**Portland Seed Co.**  
Portland, Ore.

Ask for Catalog No. 52

## Cockerels EGGS

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Write for prices.

Single setting or lots.

**FRED A. JOHNSON,**

518 35th St.

Tacoma, Wash.



# NORTHWEST HORTICULTURIST & DAIRYMAN

COLLEGE GRADING  
POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., JUNE, 1916

No. 6

## FRUIT MARKETING.

The commercial fruit crops of the country will be considerably below normal this year and therefore markets are seeking the crop instead of the reverse. It is never-the-less a good time to perfect the marketing organization, now being developed in the Pacific Northwest through government supervision, and the success of the plan will depend very much upon how the growers perfect their part to act in unison. They should maintain the position of control, but on a broad scale.

Consignments which come into competition with any fruit which is sold outright should be eliminated for that demoralizes a market very quickly, and ultimate success will depend very much on how thoroughly the growers, as a body, remain in control of their product until sold, also in a measure on how well they conform to a fixed standard as to grade and pack.

Shorten the channel between the producer and consumer by eliminating some of the unnecessary costs of handling, which has prevailed the past few years. In other words, devise a good common sense system and stick to it. This principle applies for the local as well as for the larger commercial produce selling transactions.

## LOGGED OFF LAND CONFERENCE.

The logged-off land conference held at the University of Washington recently, which was called jointly by those of the faculty giving attention to rural development and by real estate men, was fairly well attended and brought out some valuable suggestions, which may ultimately work out for the benefit of the individual farmers who make homes on tracts of logged off land as well as for the community at large. First, state aid, in some form was generally conceded to be advisable, but the method is to be very carefully worked out or speculators will receive the benefit instead of the rural home builder. The second generally adapted opinion is that any working plan for clearing is largely a local problem. In some cases dairymen will graze and clear gradually with a little powder and some form of stump puller. In other cases the work will be done more rapidly with powder as the principal element.

The third idea is to work out some practical plan where the leading business men, business organizations as well as the state may take a turn at the plow, so to speak. That is, contribute a certain amount of talent and money for the real benefit of the dairymen or rural home builder.

For this purpose "powder clubs"

rural credit clubs and stump puller clubs are suggested as well as cattle buying clubs. Farmers who are making a living for a family while building up a home on logged off land need, in most cases, several years before any payment for the land, and at least part of its clearing cost, should be made. There are several owners of tracts of logged off lands in this state who are offering to actual settlers certain tracts of land with buildings on, from two to three years before any payment is required and long time credit with low interest rate when the payments are begun. This plan is working out satisfactorily in Eastern Washington, and is a very practical way of rendering aid. When powder clubs and rural credit clubs line up, in some like practical sane manner, then the logged off land problem will be more easily solved.

## POWDER EXTRAVAGANCE.

The cost of powder has increased due principally to the advanced price of glycerine, which is made mostly from animal fats. A new formula for making powder is now in use, which is sold at more nearly the prevailing price before present war time. This is said to be a cotton-starch and nitrate composition very satisfactory for stump pulling purposes.

It is the opinion of both those who manufacture powder and of experts who use it that the waste of powder for stump blasting purposes is tremendous. This is caused partly by improper placing of the blast, but most generally by using more for a stump than is necessary. Enough powder to blow a stump a few feet out of its place serves as well as does an amount which scatters the pieces over a field, subsequently to

be picked up and burned. There is no question but powder is a leading element in economical clearing used either alone or in connection with stump pullers when properly applied. This is one of the important matters in which the county agent or the rural extension workers of the College or Experiment Station staff may become very useful by demonstrating to the farmers how to prevent extravagance when using powder for clearing purposes.

## EDUCATIONAL SHORT COURSES.

Bills before Congress on Federal aid for vocational training provides for instruction along that line in public schools. In as much as many states have already installed that feature of education, national aid for the purpose seems unnecessary. On the other hand, there are thousands of farmer boys and young men in the cities who have not the opportunity of school training beyond the eighth grade. Federal aid to provide for the further education of this class who necessarily must take short courses is commendable.

About 90 per cent of Americans are forced to get what educational training they obtain at times when work is slack and many of the most efficient men in this country and in Europe work at farm labor, or serve as apprentice at some trade while getting a few hours study per week or attending some short course or evening school. Some actual work together with the training of the mind has served to give the strongest leaders in many activities.

The State Grange of Washington has lined up politically for the printing of text books required in the

public schools in this state. The grange has also very decided views on the rural credit question. Candidates for public office will do well to keep posted, for the grange is a big factor at the polls.

## OREGON RURAL CREDIT.

The State Grange of Oregon proposes a bill providing for state bonds to be sold on the market for a rural credit fund. The money so raised is to be loaned to actual farmers at 5 per cent, amortization plan, on 10 to 30 years time, as may be agreed upon. The rural borrower gives mortgaged security and in time pays the money back to the state, thus preventing the increase of any taxes for the purpose of raising this rural credit fund. The state merely serves to finance the farmer for the time wanted, and is placed in the capacity of financier for the reason that state bonds are supposed to be more attractive for investors than are farm mortgage bonds. This, it appears, is based on the French system of rural finance, said to be more flexible than the Landschaften system.

The bond issue is to be limited to 2 per cent of the assessed valuation of the state. The State of Missouri has a somewhat similar system in practice and people of other states are watching results of the outcome.

The Southwest Washington Fair will be held on the grounds between Chehalis and Centralia August 28 to Sept. 2, 1916. The officers are preparing to make this fair one of the largest and most interesting ever held there. Send to G. R. Walker, Secretary, Chehalis, for premium list, which is very complete.



Dairy farmers in the Pacific Northwest are now aiming to keep only the cows which yield above 40 lbs. butter fat per month. This is being accomplished through cow testing associations and by means of judicious selection, careful attention to breeding and well planned provisions for good feeding.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

Address all communications to Box  
1604, Tacoma, Wash.  
(Office 511 Chamber Commerce Bldg.,  
Cor. 9th & C Sts.)

Subscriptions 50 Cents per Year when  
Paid in Advance. Otherwise 75 Cents.  
Six Months, 30c. Three Months, 20c  
in Advance.

Canadian, other foreign, also when deliv-  
ered by carrier in Tacoma, 75c a year.  
Subscribers will indicate the time for  
which they wish the paper continued.  
Payments are due one year in advance.

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## EDITORIAL STAFF CONTRIBUTORS

W. A. Linklater, Supt. Exp. Sta.  
H. L. Blanchard, Poultry and Dairy.  
J. L. Stahl, Horticulturist.  
S. B. Nelson, Veterinarian.  
A. B. Nystrom, State College, Pull-  
man, Wash.

The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

Indications are that general busi-  
ness will be very much improved  
during the late summer and fall  
months, so we are issuing this the  
vacation number early to take up  
more strenuous work next month.  
The paper dealers having run short  
on the "bleached" stock we are com-  
pelled to use the more "yellowish"  
or "golden like brand" for a couple  
of months.

The Pacific Coast Association of  
Nurserymen will convene in four-  
teenth annual meeting at Medford,  
Oregon, June 20-22. Plans for future  
operations in the plant and tree busi-  
ness will receive careful considera-  
tion. The nurserymen are keeping in  
close touch with the fruit growers,  
taking a leading part to standardize  
the products, to unify laws where  
they differ in essentials thruout the  
states and for the adoption of prac-  
tical and uniform methods in the  
disposition of nursery and orchard  
products.

## CANNED AND DRIED FRUITS INCREASING.

From the years 1909 to 1914, ac-  
cording to the U. S. Census Bureau,  
canned fruits increased 96.5 per cent,  
dried fruits 56 per cent and canned  
vegetables 58.4 per cent, while can-  
ned soups reached the phenomenal  
increase of 204.3 per cent, not in-  
cluding the product of slaughtering  
house establishments. The canned  
fruits had a value of \$24,897,174,  
while dried fruits were estimated at  
nearly \$35,000,000.

Outside of apples, mostly sold ripe,  
there is a growing demand for dried  
and canned fruits, which growers of  
the Pacific Northwest can supply and  
future markets for berry juices are  
likely to be almost unlimited.

## COAST FEED CROPS.

According to experiments at the  
Western Washington station and ob-  
servations made by its staff, the  
greatest part of the feed which is  
produced in his part of the state is  
grown between September and June.  
Wheat and vetch fall seeded is becom-  
ing known as the most valuable sil-

age crop. Wheat contains more car-  
bon than oats or rye, vetch is rich  
in protein and when put into the silo  
before the grain matures, the wheat  
and vetch combination makes a highly  
perfected balanced ration for the milk  
cow. Both of these grow luxuriantly  
during the cool humid days of autumn  
and of spring. Corn makes the best  
summer crop for silage in the fall,  
and with an abundance of the wheat-  
vetch winter crop and some corn sil-  
age the feed bill is kept down.

## NATIONAL STANDARDI- ZATION.

For some years past nurserymen  
and fruit growers of the Pacific  
Coast have been working strenuously  
for uniformity in laws in the dif-  
ferent states governing the handling  
and sale of plants, trees and fruits.  
A propaganda of education has been  
carried on for some time and now  
a bill is proposed providing for  
federal governing of commission mer-  
chants. National fruit grading legis-  
lation is well under way. Certain  
standard requirements, such as all  
legitimate commission merchants  
might endorse would be helpful to  
them, as well as to producers, but  
any impractical or expensive regula-  
tion must be avoided, for according  
to past experiences, the cost of  
unnecessary or burdensome regula-  
tions falls back on the producer and  
consumer.

Standardization of products and of  
methods from the federal stand point  
is advisable providing it is not too  
expensive or unnecessarily burden-  
some, and it is well to work towards  
that point of attainment firmly and  
slowly with a cautious tread.

## F. S. POOLE

Mr. F. S. Poole, president of the  
Poole's Seed & Implement Company,  
Tacoma, passed away on May 17th,  
at the age of 64 years. He had been  
engaged in business in Tacoma since  
1887 and in 1895 established the  
business now bearing his name and  
which incorporation will be continued  
by his sons under the management  
of Clifford L. Poole, associated with  
his brother, C. A. Poole.

Mr. F. S. Poole was a business  
man of the strictest integrity, a very  
keen buyer and always a stickler for  
high quality. The highest possible  
measure of satisfaction to the cus-  
tomer was his desire rather than the  
greatest volume of business, and  
many of our readers have come to  
look on his business house as very  
dependable. The same policy will  
continue to prevail, Mr. Clifford Poole  
having practically been the manager  
for the past two years.

Mr. C. C. Georgensen, Superinten-  
dent in charge of the Government Ex-  
periment Stations in Alaska, called  
at this office while on a business trip  
to this state. He bought seven  
head pure bred Holsteins for the  
Kodiak Station, where experiments  
to develop a hardy milk herd will  
be conducted.

## FRUIT CROP PROSPECTS.

The fruit crop generally in the  
Pacific Northwest will be short of  
normal, particularly cherries and  
peaches. Apples and pears are bet-  
ter, but very spotted as to yield.  
Some places trees are bearing full  
loads and other trees close by are  
without fruit. On the whole, the  
crop, with exception of the bush

fruits, will be below normal.

## SHOT HOLE BORER.

The fruit bark beetle or shot hole  
borer, appears to be abundant this  
season, perhaps, because of the lat-  
ness of growing conditions. This pest  
attacks first the trees which are not  
in the most thrifty condition. The  
following wash has given owners  
good results in British Columbia and  
in other localities where it has been  
given a thorough trial.

Water ..... 3 Gallons  
Soft Soap ..... 1 Gallon  
Crude Carbolic Acid ..... ½ Pint

Mix these materials thoroughly and  
paint over the infested portions of  
the tree at ten-day intervals until  
three applications have been given.

## EXPRESS YOUR WANTS.

In a recent issue of the Agricul-  
tural Grange News, Mr. C. E. Flint,  
of Blaine, gives some very timely  
hints, endeavoring to arouse farmers  
from indifference and urging them to  
wake up, think and act, when he  
says:

"The strangest thing in the world  
to me is the fact that such a great  
proportion of the citizens of this  
country are so perfectly contented  
with conditions as they are that they  
will not lift a finger to better their  
condition.

They are perfectly willing to pay  
the high taxes; are willing to sell  
their wheat or other product for less  
than it costs to produce; are willing  
to wear old clothes, with patches on  
both sides; willing to walk while  
others ride in their machines. Yes,  
and even willing to go to war when  
the other fellow wants them to, and  
die and be rolled into a trench with  
a thousand other chumps.

What is the matter with the rank  
and file of our people, anyway? Is  
it lack of brains or ambition? Or is  
it just a careless habit we have fallen  
into to let the other fellow think for  
us and we work and fight for him?

Patrons, let's change places for a  
while and do some of the thinking  
ourselves and let the other fellow  
work and fight awhile. It will do us  
both good.

Get out that stub of a pencil and  
let President Wilson hear the voice  
from beside the firesides, and say it  
good and plain. Use plain English.  
Tell him we want a rural credit plan  
that will benefit the farmer, not one  
made for the banker. Tell him we  
believe in a preparedness that will  
help us to live better, not to die. Tell  
him that we insist on the parcel post  
being extended, not curtailed. Tell  
him that we must have national help  
to market our crops, and anything  
else you want, just as you would tell  
any other man who is working for  
you.

While you have your pencil out  
and sharp, just write to your con-  
gressman and tell them a few of your  
needs. Also tell them that a "careful  
consideration" reply will be consid-  
ered as meaning that they do not in-  
tend to comply with your request  
and that you will act accordingly at  
the next election. Let them know  
that you want a fair answer; that  
you want to know whether they are  
working for you or the other fellow.  
If they are not willing to go on re-  
cord as being for your interests then  
they are surely against you.

If only the members of the Grange  
in the state of Washington would  
each write one postal card a week

for the next two months there would  
be five congressmen and two sena-  
tors that would be a unit on the  
measures we want enacted into law.  
Why don't we do it?

## OX WARBLER EXTRACTED.

Mrs. Etta Close, of Puyallup, R.  
1, Box 15, says that she extracts Ox  
Warblers in cattle by three or four  
applications of fresh lard. Rub well  
into the hide over the grubs; they  
will very soon come out.

(Another gives the experience of  
using a small proportion of turpen-  
tine with the lard which it is said  
readily removed and destroys ox  
warblers.—ED.)

The markets are open good and  
strong to Puget Sound grown Grav-  
enstein apples. This is the variety  
above all others to grow in the Coast  
section for the commercial markets.

## CLEARING LAND.

The logged-off land problem was  
carefully considered at a conference  
held recently at the State University,  
Seattle. The questions dealing with  
rural credit and cost of clearing were  
explained in the address given by Mr.  
N. B. Coffman, of Chehalis.

On the cost of clearing, he said:

Many thousands of acres formerly  
covered by dense forests are now  
yielding abundant harvests of agri-  
cultural products. The methods of  
the pioneer are slow and tedious, re-  
quiring little machinery or expendi-  
ture of money. The use of stump  
pullers and char-pitting have in-  
creased efficiency with a minimum  
of cash outlay. Blasting powder  
brings with it risk and cost. The  
powder bill often foots up to and  
frequently exceeds seventy-five dol-  
lars-an acre. These are all home  
labor methods. Clearing by contract  
has not been extensively undertaken  
because it calls for too large a cash  
outlay. When the cost of clearing,  
measured by cash expenditure, is  
added to the cost of the land the  
income value of the land is generally  
exceeded. The donkey engine is  
coming more and more into use,  
especially where the acreage is con-  
siderable. Contracts are seldom  
taken below forty dollars per acre  
and then slashing and much burning  
has preceded, and the contractor  
leaves immense piles of yarded  
stumps and logs for the owner to  
burn and destroy.

It is plainly apparent that more  
economical and rapid methods of  
clearing must be devised before land  
clearing can be greatly expedited or  
the cost brought within the zone of  
profit.

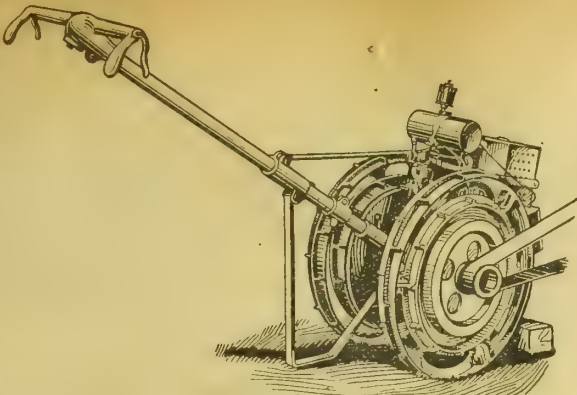
Expeditious clearing extensively  
undertaken is what is wanted. The  
complexity and largeness of the task  
is not always comprehended by those  
who are working upon its solution.  
It is distinctively an engineering  
problem, calling for large use of cap-  
ital, powerful and expensive machin-  
ery, and a big equipment not unlike  
that used by railroad construction  
contractors.

The task of clearing a big tract of  
cut-over land ready for cultivation  
is an appalling one. Stumps from  
two to nine feet in diameter lift  
their ugly heads above the brush  
and debris; dead snags reach up  
here and there to heights of from  
fifty to two hundred feet; live second  
growth is left to stand, twisted, half  
uprooted and striped of limbs. Logs



**BEEMAN GARDEN TRACTORS.**

The Beeman Garden Tractor and Portable Engine is a late invention which has been thoroughly demonstrated for practical and economical use on farms near Minneapolis. It is virtually a walking engine taking the place of a horse in the field and ready for churning, pumping, wood sawing or other stationary duties whenever desired. It pulls the walking cultivator or any garden tools where power is required. As a garden cultivator it is said to be a money saver and its owners may assume to grow bigger crops. A boy or girl can operate it when knowing how to start and steer, astride or



between the rows of plants. It is made by Beeman Garden Tractor Company, with offices in Plymouth Building, Minneapolis, Minn. It has been perfected by Mr. E. R. Beeman, who was formerly with the Moline Plow Company.

unfit for mill use, some of them centuries old and many of them water soaked, interlace the ground, often overlapping three and four deep. A tangle of underbrush covers the ground. The surface is generally broken and is one mass of hummocks and hollows. The ground conceals a network of roots, often massive in size and running out many yards from the parent tree.

Think of the hardihood of a man who can tackle a job like that single-handed. Think of going at it with a horse-power stump puller or even with a donkey engine. It is a Herculean undertaking, which if tackled with any hope of economical results, must be gone at with the most powerful and rapid working machinery. The solution of the problem of clearing extensively and economically must be in the direction of large contracting, where the cost is assessed to the land and payment provided for by bond issues against the land. Such extensive work necessitates bringing power and heat into the field in the shape of electricity or steam or gasoline. It means assembling a large and expensive plant, using a trained crew and systematizing expenditures so that the project can be financed. It calls for expert engineering applied to developing units of energy from a central plant. It calls for power driven grubbing hooks, power lifting cant-hooks, power pulled graders, power yarders and power burners. In short, it must be a modern engineering job backed by modern methods of financing and undertaken on a comprehensive scale with specially devised machinery. No one so far has had the faith and courage to risk his capital in such an undertaking. So large an equipment could not be moved into a neighborhood until a large acreage was first put under contract and subject to assessment, and such assessments must be provided for by legislation.

Until such extensive methods of land clearing are found profitable, it is just as well to dismiss as impracticable all schemes for organizing companies to buy land and clear it or partly clear it and add something in the way of improvements with the expectation of selling with profit added. The cost under present methods far exceeds the value of the land after it is cleared. The law passed by the last legislature creating land improvement districts is a dead letter. The cost is more than

the land will bear. Any legislation which commits the state to undertake clearing land under methods now in use or to finance the cost will prove calamitous.

**Conclusions Reached.**

If the foregoing reasoning is sound we arrive at two conclusions: First, financing settlers on cut-over lands rests primarily with local people making use of local capital through adaptation to methods already generally understood, and which can be adapted to farm financing through modification of the laws pertaining to saving and loan societies. Second, until such time as clearing on a large scale can be done at much less cost, land should be sold to the settlers in its unimproved state, letting the purchasers pursue their own methods in clearing and improving.

These conclusions need not be accepted as disappointing. They simply bring the task closer home. If in realizing this we face the situation as confronting us individually with a responsibility that cannot be shifted we may be making the quickest approach to the solution.

As a people we are becoming so accustomed to doing big things in a hurry-up way that we are inclined to look with disdain upon the day of small things; but let us not forget that it is just as true now as it always has been that it is the little persistent efforts which make no noise that do the business.

The next legislature might do well to make provision whereby the State can undertake and carry on a continuous, comprehensive and scientific research and demonstration work with a view to reducing the cost of land clearing and accelerating the cultivation of agricultural logged-off areas. It is adjudged to be within the province of the State and its apparent duty to aid in the discovery and application of better and cheaper METHODS of land clearing; but the State should not be called upon or encouraged to go into the BUSINESS of land clearing.

**BETTER HORSES.**

The Tacoma Riding and Driving Association has been organized with J. E. Bonnell, president, and A. J. York, secretary, both of Tacoma. The trustees are A. M. Button, A. Boyle, J. Myers, J. Whitney, J. Welch, W. K. Snell, and G. W. H. Davis. The purpose is to create a greater interest

**ACTIVITY ON THE PRARIE SOUTH OF TACOMA**

30,000 ACRES OF IT TO BE PUT UNDER IRRIGATION

A COMPANY has been formed and the preliminary surveying done. Active work is next in order. The promoters say the money is secured to complete the project.

**Another Big Boost.**

A BILL has recently been introduced in congress to appropriate one million dollars to purchase several thousand acres of this land for an army post and maneuvering grounds. If this bill passes the government will consolidate all the army posts of the Pacific Northwest in one big post at American Lake. ANOTHER 60 days will see a big movement in the lands south of Tacoma. If you want to take part in this activity see us without delay. We have several thousand acres that we can sell at \$25 an acre and up. When watered the yields of forage crops are heavy. Excellent opportunities for dairymen.

**E. F. GREGORY CO.**

1117 Pacific Ave.

Second Floor National Realty Bldg.  
TACOMA, WASHINGTON

**Bigger Crops**

are being grown every year by farmers who are improving their soils by using

**FERTILIME**  
TRADE MARK

Government experts agree that Western soils need lime to remove the acid sourness.

Ordinary lump lime is slow to act and 50% waste.

"Fertilime" saves this waste; brings the plant food from the soil; is easy to apply; and acts the first year.

For best results use "Fertilime" in the winter.

If your dealer cannot supply you, write our nearest office.



**F. T. Crowe & Company**

Seattle Portland Tacoma Spokane

**GROUND LIMESTONE AT LOW RATES**

**"Carco" KILLS MAGGOTS**

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers, who are highly pleased with results.

**SOME OF OUR PRODUCTS**

Fish Oil Soap Lice and Mite Liquid  
Fly Chaser Carbolineum  
Creosote Crude Carbolic  
Disinfectants Wood Preserving  
Materials

For Sale By All Leading Seed Houses  
On Pacific Coast. Ask For It.

Manufactured ONLY by

**Standard Chemical Company**

TACOMA, WASH.

(Send for Circular)

in the breeding and development of good horses, as there is a growing demand for good animals, both in this country and from abroad. There are strong indications that the foreign live stock market will continue to be brisk from now on, and after the close of the war. Preparations are being made for a good export business from Puget Sound and other Pacific ports.

**LOOK AT THIS DOOR**

A silo with a balanced and hinged door, one that you cannot lose, and does not stick, is worth 40 cents a day to you, in the time you save.

**THE Weyerhaeuser SILO**

The massive doors of this silo are so nicely balanced that a child can swing them. By means of malleable compound latches as shown above, each door is clamped firmly against the jambs.

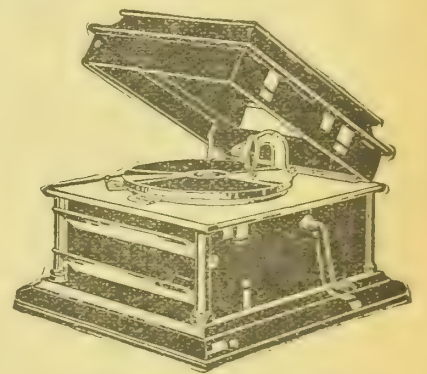
The vertical staves do not retard the settling of the ensilage.

Write for name of our nearest agent.

**WEYERHAEUSER LUMBER COMPANY**  
Everett, Wash.

**\$55.20**

This Wonderful Grafonola with sixteen selections on right ten-inch double face records.



**All for \$55.20**

at

**EILER'S**

Tacoma's Most Complete Musical Service

Broadway at 9th

Tacoma Theatre Bldg.

TACOMA, WASH.

**FARM PROPERTIES**—Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. **DANIEL McGREGOR**, Berlin Bldg. Tacoma, Wash. Established over 30 years.





### F. W. POWER

Mr. F. W. Power, of the Oregon Nursery Company, passed away near the close of last month. He had been in ill health for some time, but the immediate cause of death was blood poisoning, which developed from an accident. Mr. Power was near middle age, a great student of horticulture, very thorough both in his literary work and as a nurseryman. He established the Pacific Horticultural Correspondence School, which has been very helpful to nurserymen, to fruit growers and to those engaged in the handling of fruits. He was a man of the strictest integrity, forgetting self while endeavoring to be helpful to others. He is keenly missed by fellow nurserymen, fruit growers and all who knew him. Our deep felt sympathy goes out to his bereaved family. May they be comforted by the giver of eternal life.

### AGRICULTURAL ENGINEERING COMPANY.

The Agricultural Engineering Company was recently organized at Seattle with Prof. C. J. Zintheo, known to our readers through his articles, as its manager. The aim is to develop farming by introducing modern machinery and improved appliances, so as to reduce the cost of production to the owner, and to make farm life more attractive.



The company will be prepared to furnish plans for farm buildings, dairy barns and milk houses as well as to take contracts for the erection of buildings and furnish the necessary equipments, water systems, light plants and appliances. They are also prepared to take contracts for draining land by tile and open ditches, as well as for irrigation systems. They are distributors for for Western Washington for Moline

Plow Company, the Weyerhaeuser Silos and Empire Dairy Machinery, as well as other lines.

Associated with Mr. Zintheo are several agricultural experts, whose time will be devoted to the study of individual problems of the farmer in order to put the farms on a higher paying basis.

After graduating from the University of Minnesota course of engineering, Mr. Zintheo took training in the implement factories in Chicago. In 1900 he went to Paris to install the Exhibit at the Exposition for the Deering Harvester Co. Then went to Siberia and introduced the first American farm implement ever sold in that country. During the winter he traveled in Argentine Republic and returning to Europe he visited thirteen different countries outside of the United States during two years, studying agricultural methods.

On his return to America he accepted a position to teach Farm Mechanics in the North Dakota Agricultural College. He was then called to the Iowa Agricultural College, where he organized the first complete course in Agricultural Engineering in this country.

After two years in Iowa he was called by the United States Government to organize similar work in the U. S. Department of Agriculture. Coming to Washington ten years ago, he spent five years in developing processes for clearing logged-off land by utilizing the chemical products of the stumps to make them pay the cost of clearing. For the last three years he has been agricultural engineer for the John Deere Plow Co., of Seattle, and during that time has carried on an extensive campaign in getting farmers to plant corn for silage followed by vetch and wheat as a fall and winter crop, thus introducing the two the crop per year system.

The Agricultural Engineering Co. has launched a very useful activity and the farmers may have the benefit of valuable experiences and observations and avail by consulting with them.

### UNNECESSARY EXPERIMENTS

Discerning Between Good and Poor Investments.

Farmers would do well to refrain from investing in new innovations. Just now the market is being flooded with all kinds of silos. Every man who has a new idea is urging it upon the farmers that his "is the greatest invention of the age."

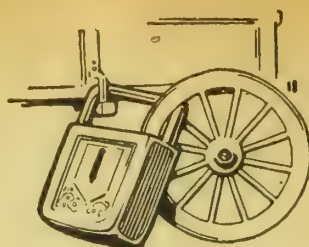
I have been invited to buy stave silos, concrete silos, Wisconsin modified silos, double wall silos, silos with the boards running horizontally, silos with guy lines and without guy lines, silos with hoops and silos without hoops.

The smooth tongued agents tell me that they have silos that do not need any hoops. That their silos will not swell nor shrink. I do not care how a board or timber may be placed, if it is frequently wet and dried again it will expand and shrink and by so doing eventually create admission of the air or air pockets along the wall.

A tall building thirty feet high, standing on a foundation twelve feet across, is bound to be top heavy, and against winds or the settling of the silage possibly to one side or the other, it needs the support of guy lines, and no one can make me believe to the contrary because I have seen ample proof.

I am in the market for a second silo, but the tried and approved stave silo is good enough for me.

Just now there is a new trick in the silo field, a smooth tongued promoter goes into a community, sells one or two silos and then goes among other farmers and proposes to



Less Chance for  
Locked Wheels

MICA AXLE GREASE offers extra protection. By a special process, powdered mica is blended with highest quality petroleum grease. The mica forms a smooth coating on the spindle that keeps it cool and well lubricated. And the mica makes Mica Axle Grease last twice as long. Get a can from your dealer today.

Standard Oil Company  
(California)

## MICA AXLE GREASE

### CATALOG AND GUIDE BOOK ON ORNAMENTAL PLANTING FREE

Full of helpful suggestions to make your place beautiful.--It's up-to-date, instructive. Please mention this paper and write to,  
J. B. PILKINGTON, Nurseryman  
Portland, Ore.

## FARM CURED MEATS

Better—Cheaper

Use your Parcels Post privileges  
Also \$2.50 book on curing meats free with each \$10 order.  
W. H. KAUFMAN, Bellingham, Wn., R. F. D. No. 2

## PORTLAND WHOLESALE NURSERY COMPANY

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.  
A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

### SPECIALTIES

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.  
Write now.

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature.  
Twenty years of satisfactory service to growers our best recommendation.  
923-5 Railroad Avenue, CHAS. UHLEN, Spokane, Wash.

## BOXES For Fruit Growers and for Creameries

All kinds, Quality A1, Prompt Shipments

PACIFIC BOX COMPANY

26 and East I St.,

Tacoma, Wash.



## SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to  
B. HAMMOND, Fishkill-on-Hudson, New York.

## Nursery Stock

FRUIT TREES  
SMALL FRUITS  
ORNAMENTALS

Growers are now planting small fruits, to supply the market for fruit juices made from the different berries, also the large fruits to supply the demand for dried apples and pears. We have the choice logan, raspberry and blackberry plants, also the trees of the varieties for dried fruit purposes, offered at very reasonable prices.

Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY

F. J. Rupert, Mgr.

SALEM

OREGON



Sews Leather  
Quick

### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.



erect a factory for supplying his "wide and growing" prospective trade. Like other promotional schemes, this will be shortlived, of course. He will get a few farmers to contribute \$10 to \$25 each, and when the scheme has gone as far as seems advisable this miniature J. Rufus Wallingford will decamp for other fields.

Just now he has three or four of them going in good style. Will we farmers never learn. — CHAS. E. LEEK, Clinton, Wash.

### COST OF REMOVING STUMPS BY BLASTING.

J. J. Mattern

Stump land can be bought in nearly all average sections of the East for less than \$15 per acre. A very great deal of this land has rich soil, and lays so that it could be farmed to advantage. With the farm owner of such land, or the lumberman who has just finished cutting it, the question is how much will it cost to clean the ground up for farming.

This can be answered in two ways. One of them is the average cost an acre, as shown by experience. The other is the usual cost per stump, as it can be figured out, as well as by experience. Green stumps cost more to remove than stumps that

have rotted away their outer bark through a season or two after they are dead. Unless the ground is to be put in a crop that will yield a good profit the first year, it is better to wait for this rotting than to take out the green stumps.

The following table shows how much powder it takes to blast out stumps of different sizes. Your local hardware dealer likely can tell you the price of powder. These figures taken together then will tell you almost the exact cost of taking out your stumps. In the main, it will run around 25 cents a stump for material, taking them all, little and big, as they average in cut-over land.

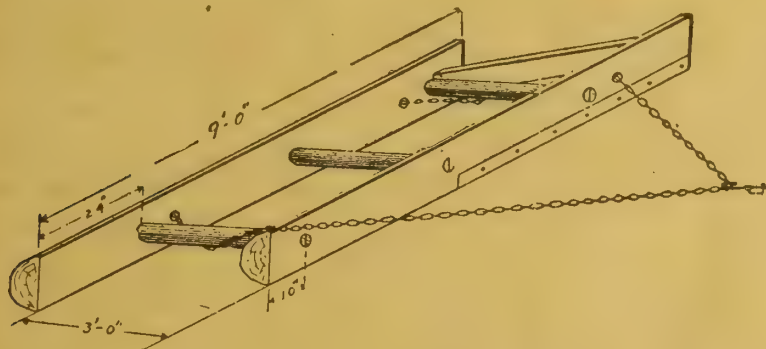
|    |    | Inches. |    |    |    |    |  |
|----|----|---------|----|----|----|----|--|
| 12 | 15 | 16      | 18 | 20 | 24 | 30 |  |
|    |    |         |    |    |    |    |  |
|    |    |         |    |    |    |    |  |

In calculating the cost, you, of course, will want to figure against this not only the value of the land when cleared, but the probable value of its production. It can be reckoned that where an average stump stands you can grow 6 quarts of wheat, or 10 quarts of corn, or 8 quarts of oats. Or you can grow an apple tree worth \$10 to \$50, and which will produce \$2 to \$5 worth of fruit every year. The land itself ought to be worth \$50 to \$100 an acre.

### THE ROAD DRAG.

It requires considerable skill on the part of the operator of a road drag to get the best results. This skill can be acquired only by actual experience in the operation of a drag, and the following rules, given by L. V. Edwards, Division of Engineering, State College, are intended only as a guide for the inexperienced:

- (1) Use a light drag.
- (2) Fasten the doubletree to the draw chain in such a manner as to make the drag operate at an angle
- (3) Set the drag at a sufficient angle with the center line of the road so that it will readily discharge the material.
- (4) Drive the team at a walk.
- (5) Ride on the drag, do not walk.
- (6) Do not drag a dry road. (This is important.)
- (7) Drag when the road is plastic or muddy.
- (8) Regulate the amount of material to be moved by changing the driver's position on the drag.
- (9) Drag, if possible, immediately before a freeze.
- (10) Begin at one side of the road, returning on the opposite side.
- (11) Do not attempt to move much material at one time with the drag.
- (12) Try to drop material in ruts and holes by shifting your position on the drag.
- (13) Always drag a little material towards the center of the road until it is raised in the center ten or twelve inches.
- (14) The amount of material the drag will carry can be regulated by the driver accordingly as he stands near the cutting end or away from it.
- (15) The correct time to drag a road is when the surface contains sufficient moisture to compact readily.



of from 60 to 75 degrees, with the center line of the road, or at a skew angle of from 15 degrees to 30 degrees.

- (3) Set the drag at a sufficient angle with the center line of the road so that it will readily discharge the material.
- (4) Drive the team at a walk.
- (5) Ride on the drag, do not walk.

### CASH BASIS.

Farmers in conjunction with business interests are now working more and more towards a cash basis. The Federal Reserve Board have decided that notes taken by implement dealers in settlement for sales of machines to farmers are notes given for agricultural purposes. The Federal Reserve Banks are permitted to discount notes given for agricultural purposes which mature within six

months of the discount date while ordinary commercial paper handled by these banks must mature within ninety days.

The note must contain the following clause in printed form:

"THIS NOTE ARISES OUT OF THE PURCHASE FROM THE PAYEE OF GOODS TO BE USED FOR AGRICULTURAL PURPOSES."

Notes of this kind can be made

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

**OREGON NURSERY CO.**  
ORENCO, OREGON

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON

## What Does Silage Cost?

The acres used and cultivated time and again, and the area to be gone over to get the fodder—aren't these the big items in Silage cost?

Nitrate of Soda, as a Top Dressing worked in at last cultivation, will lessen your charges and cheapen production of Silage.

Bigger, more succulent stalks and bigger ears will be yours.

Send post card for free book on "Corn Cultivation"

**DR. WILLIAM S. MYERS**  
25 Madison Avenue, New York

## Middle - Aged and Elderly Men Make Money Selling

our hardy, guaranteed ornamental and fruit stock. Cash weekly; part expenses provided.

Many elderly and middle aged men in all parts of the Northwest are making good money selling our line. You will be surprised at the amount of business you can get in your locality.

Write us today. Complete information will be sent at once.

**Washington Nursery Co.**

TOPPENISH, WASH.  
Largest Nursery between Rocky and Cascade Mountains.

## Rhododendrons

Native Shrubs, Plants and Flowers, collected from the forest. Send for Circular.

JOEL SHOMAKER  
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## Twenty-five Per Cent Reduction

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for other purchases which the farmer needs for his purpose and turned over to the seller the same as cash. It will enable farmers and fruit growers whose credit is good to buy articles which they need at lower prices while giving them ample time to market their crops. The same plan might be carried out by nurserymen, seedsmen and by stockmen. It is a common sense plan to employ idle money, affording circulation where needed on a substantial credit basis, where time is an essential factor for the original buyer.

### BLOAT TREATMENT.

Bloating is the result of the rapid formation of gas in the paunch. There is always more or less gas formed in the paunch by the action of bacteria upon the coarse parts of the food. Under ordinary conditions this gas is taken into the circulation as rapidly as formed; but when large quantities of easily fermented green food are taken into the paunch gases are formed more rapidly than the blood can take them up and bloat results.

While there is no certain method of preventing bloat, it is possible to greatly lessen the danger from this source. Before the herd is turned onto alfalfa or clover pasture for the first time, the animals should be given all the hay they will eat, or be allowed to fill up on a pasture of mixed grasses. Then when they have eaten all they will of this other food turn them into the clover or alfalfa. Then keep on clover or alfalfa continually as they are much less apt to bloat when they take their feed often and in small amounts than when they eat a large amount in a short time.

If the animal is severely bloated when found the surest remedy is tapping. This is best done with a trocar at a point half way between point of the hip and the last rib, pointing the trocar slightly downwards. The trocar is then removed, leaving the tube or canula in the opening to allow the gas to escape.

When the bloat is reduced give as a drench two ounces of turpentine in a pint of raw linseed oil or one quart of warm milk. If the raw linseed oil is not used it is well to follow the milk and turpentine in a short time with one pound of Epsom salts.

If the case is not severe when found either of the following remedies may give relief. 1.—Tie a rope or wooden gag in the mouth. It is best to have this gag well coated with pine tar. This gag helps to start belching of the gas. 2.—Pour cold water over the loins. 3.—Give two ounces of turpentine in one pint of raw linseed oil or one quart of warm milk. 4.—Give one to two ounces of baking soda in water as a drench. It is best to follow any treatment with one pound of Epsom salts unless some other physic has been used in the treatment given. Stand the animal with the front feet considerably higher than the head. This will relieve the pressure on the lungs.—JAMES N. PRICE, Extension Specialist in Dairy and Livestock.

(A leading dairyman who feeds dry hay or straw before turning stock into the alfalfa field, also places dry feed in the field, accessible to the cattle at any time, states they do not bloat.)

### OVERHEATING OFTEN ATTRIBUTABLE TO FAULTY IGNITION.

A pamphlet just issued by the Standard Oil Company, entitled "Engine Overheating, Mechanical Bulletin No. 3," throws considerable light on the problem of overheating of automobile motors. This bulletin says, in part:

"One of the common causes of overheating is due to ignition. A late spark overheats the motor; the charge is ignited after the piston has started downward on the power stroke; consequently the hot gases are not expelled from the cylinder before the second charge is fired. This will continue until the cylinders become so hot that preignition will take place. That is, the gas will ignite before the piston has reached the correct point, resulting in what is known as a 'spark knock.'"

"By advancing the spark lever on the quadrant, the mixture is ignited before the piston has reached top center, so that when the piston does reach the center and starts down, the expansion of the gases is complete, and they are exhausted at a comparatively low temperature."

"Missing of one or more cylinders has a tendency to overheat the motor, as the fresh gas is taken into the missing cylinder and ignited by the outgoing charge from the working cylinder, which causes muffler explosions and back pressure on the cylinders which are working."

"The right kind of lubricating oil is a great help in keeping the motor cool, and many of the leading automobile engineers and motor experts say that oil made from western asphalt-base crude has less tendency to 'break down' under cylinder heat than oil made from other crudes, and is, therefore, a more efficient aid in keeping the motor cool."

### LIME MUCH USED.

There was more lime spread upon the soils of the Coast Section during the past six months than during any previous five years, owing largely to the good work of Mr. Henry Bucey and the low price made by the manufacturers. Fruit growers and dairymen are continuing to apply the ground limestone up through the summer months. It can be spread any time without deterioration or loss.

According to a recent statement by R. P. Laird, of the Oregon Agricultural College, Lime increase the ammonifying power of certain soils, particularly those that contain large amounts of soil acids or are poorly drained. The reason is that lime unites with the acids to form insoluble substances which increase granulation, tilth and aeration.

These conditions have a beneficial effect upon bacterial action in the soil. Granulation tends to give a more open condition to the soil and increase aerobic soil organisms which are particularly productive in the ammonifying power of a soil.

Lime also tends to increase the hygroscopic and capillary soil water. Soil water tends to regulate the soil temperature which is a very important factor in all bacterial growth.

Lime is an essential element for all plant growth. It also aids the growth of many kinds of bacteria, especially those which convert organic nitrogen to nitrates and those which fix atmospheric nitrogen in the soil.



strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre  
Oats averaged in 1915 over 45 bushels per acre  
Barley averaged in 1915 over 40 bushels per acre

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**TRACTORS ON FARMS.**

Farmers in the Middle States who have used tractors find the machines advantageous for heavy work which can be done more rapidly than by horse power. The fuel consumption is about 2½ gallons per acre. A farm of 140 acres is the smallest upon which a two-plow outfit proved profitable. The tractors are more generally used on the larger farms or where a number of small farms are worked co-operatively by joint ownership of the tractor or by some individual and the work contracted.

Intensive farming in the Pacific Northwest, where there are small holdings, will no doubt be done largely with tractors under some co-operative or contract arrangement. In the Coast Section, horse feed is expensive and that is an item which will figure largely in the use of farm tractors. On the corn, wheat or the hay farms horses will be displaced more slowly by tractors.

**MAKING THE SILAGE.**

Much of the June forage crop of the Coast Section is going into the silo this year. In fact, a far larger per cent. of the feed crop will be saved than ever before. Some are leaving the building of silos until the very last moment but the past winter was a forceful reminder that the silo is a very essential part of farm equipment. Some of the enterprising silo firms are giving ample time for payment, providing the farmer making the purchase and who is in need of credit shows evidence of practical methods in his farming operations, including common sense care of the stock, and discrimination between the profitable and non-profitable animals and at the same time shows foresight enough to have prepared for a good yield.

Having the silo, beginners need to be careful to make good silage. There will be no moldy silage with air tight walls and good packing when filling. J. N. Price, specialist in dairying and live stock, State College, Pullman, says it is a very common mistake to fail to pack firmly around the walls which spoils from 4 inches to 1 foot of silage. The space around the wall should be packed more firmly than any other part of the silage. The remainder of the surface should be kept packed evenly to expel all the air and prevent the formation of air pockets which result in moldy spots.

It is important that both the light and heavy material be carefully distributed over the surface of the silo in order to get it evenly mixed.

Use plenty of help inside the silo. This is the place for your best help. A little extra care in packing will mean dollars in quality of silage.

**For Late Summer Use.**

The feeding of silage will not only increase the milk yield over that secured by dry feeding, but will, in most cases, lessen the cost of feeding, and will keep the herd in better health.

The milk yield always drops off rapidly during the dry season unless the cows are supplied some food in addition to pasture. Silage furnishes an excellent supplement to short pasture; and if fed as soon as the pasture begins to fail the milk yield will be maintained.

**Size.**

The silo should be of such a diameter that the herd will consume each

day a layer of silage two inches in depth. In summer feeding it is often necessary to use three inches in depth per day. Where a silo of too large diameter is used the silage is not fed fast enough to keep it fresh, consequently the air penetrates the surface to a depth of four or five inches and spoiled silage is being fed all the time.

Twelve by twenty-four feet is the size most popular. This holds 38 tons, enough for 12 cows for 6 months. A 10x24 feet silo holds 26 tons, enough for 10 cows for 5 months, based on a feed of 35 pounds silage a day.

**When to Use Water.**

Don't put the forage crop into the silo too sappy and green, better have it too well cured, for it is an easy matter to add water.

To make silage it is necessary that the air be excluded. To exclude the air the cut material must be of sufficient weight to pack well. When the crop is dry it comes into the silo in a very fluffy condition, and, as it can not be packed tight enough to exclude all the air, air pockets are formed, which cause moldy spots in the silage. When the material is too dry, water should be added to it as it goes into the silo. When corn is cut at the proper time it is near the danger line of moisture. It takes experience to tell whether or not water must be added, but perhaps the best guide is to notice how the material comes into the silo. It should be moist enough to pack firmly under one's foot when tramped, and water should be added to the dry, fluffy material until this condition is reached, says J. B. Fitch, of the Kansas Experiment Station. While silage that is too wet is not desirable, it is hard to injure silage from adding water to it. Excessive dryness, on the other hand, causes spoiled silage. In case of doubt, therefore, water should be added. The common practice and most desirable method of adding water to silage material is to run a stream of water into the blower. In this way each particle comes into contact with the water and the moisture is evenly distributed throughout the silo. Where it is impossible to add water to the blower, the water can be added in the silo. It should be well distributed in the silo, because a great amount of water added in one place is apt to run down through the silage and leave dry places at the surface. It is impossible to state the amount of water to add to silage. The material itself is the determining factor. Silage near the top of the silo should receive more water than that lower down. This will make greater weight for the silage near the top of the silo, where it does not have much weight on it.

**LICE KILLER FOR HOGS.**

An inexpensive lice killer for hogs is described in Reclamation Record by H. J. Colman, Omar, Wash., as follows: Set a round post in the ground and leave it 3 feet above the ground. Fasten a tin can on top. Fasten a large rope in the can, and let it run out over the top down the post and run it round and round the post at the right height for the logs to rub. Fill the can with kerosene. Soak the rope first with kerosene. The kerosene will follow the rope out over the can and the hogs do the rest.

# Get this valuable free book

Do you own an orchard? Or are you going to plant one?

If so, you will find information worth many dollars to you in the Giant TREE BOOK, "Better Orchard Tillage."

This book is written especially for Pacific Coast fruit growers. It tells how to have thriftier, faster-growing, earlier-bearing trees by planting in beds blasted with



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It tells also how to secure better drainage and increased moisture-storage capacity in established orchards, and how to get larger yields and save money on fertilizers.

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**WALNUT TREES, SHADE and ORNAMENTAL TREES**

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

**Milton Nursery Company, Inc.**

Milton, Oregon

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A good plan is to make a large shade near the oiler. This should be large enough so that the sun will not shine on much of the ground and high enough so that a man can walk under. It can be made cheaply by setting posts in the ground and covering them with brush and old hay or straw. You won't need any "hog wallow" with this arrangement.

#### BLOWING ALFALFA HAY.

At Hermiston, Ore., Umatilla project, during the past winter, according to an exchange, one of the active industries was blowing hay into box cars. In that region of abundant alfalfa the hay baler is too slow, hence, they have devised a scheme for chopping the hay by machinery at the stack, loading it into big box wagons, holding 2 tons and upwards, and delivering by multiple horsepower to the railway station. At this stage

of the game the gasoline engine comes into play, or electric motor, driving an ordinary blower such as is used in planing mills for handling shavings. The blower sucks the chopped hay out of the wagon and blows it violently into the railway cars for transportation to Portland or other coast markets. By this means a somewhat larger carload of hay can be secured than with baled hay, and the consignor instead of trucks uses a blower to extract the hay from the car and to shoot it into his warehouse or stockyard bins with greater convenience and much less waste than usually occurs in handling baled hay. The cost of this method of shipping hay is said to be less than the baled hay method, and apparently the idea is worthy of adoption on other projects, since it also furnishes a partial substitute for an alfalfa meal mill.

## IRRIGATION

Adequate, available moisture during growing seasons.

#### IRRIGATING POTATOES

Irrigating potatoes is a rather delicate operation because applying water in the wrong way will prove fatal to the crop, no matter what other favorable conditions are provided before or after. A reasonable even supply of moisture is essential to a successful potato yield. Under irrigation, it is not an easy task to get this even supply of water. Potato ground should never have a heavy application of water. Soaking the ground will cause it to settle or bake and good potatoes can not grow in soil in that condition.

There is only one rule that can be given for irrigating potatoes, and that is to give them light applications of water, and apply the water as often as necessary to keep the ground moist. The number of times that these light applications should be put on will depend almost entirely on the type and physical condition of the soil. The time the potatoes should be irrigated can not be determined by dates, but only by examining the soil to see whether or not it is moist.

Heavy applications of water will not only result in the ground becoming too hard to allow the growth of good potatoes, but if given during a hot spell of weather, it will cause second growth.

Light applications of water as frequent as needed to keep the ground moist, and plenty of cultivation to retain the moisture that is put into the ground are absolutely essential to successful potato growing under irrigation.

Further questions on this subject addressed to me will be gladly answered.—LEE M. LAMPSON, Kennewick, Wash., County Agriculturist, U. S. Dept. of Agriculture.

#### WATERING JUDICIOUSLY

Whether in the irrigated districts or in the semi-humid parts of the country, water is the essential element in the growth of plants, because of its direct influence on the plant itself and for the reason that the plant nourishment contained in the soil is subject to influences of moisture especially when the temperature is right for good growth.

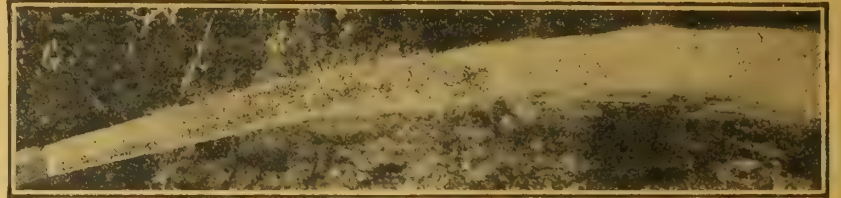
Therefore it is very important that the moisture is available at the right time and in judicious quantities.

In the Coast section, more attention is given to irrigation than formerly, because in recent years the dry spell seems to have been prolonged when crops should develop bulk. The land being expensive to clear, in many cases, better results are derived from investments in irrigation appliances than in additional acres. The overhead system seems especially valuable in this part of the county, as it serves best on clay lands, is more like the natural watering of rain, and while more expensive to install, affords a greater measure of service at less cost.

The quantity of water required for best yields of small grains is something each farmer should endeavor to work out as he may under the conditions which he has on his farm, says I. D. O'Donnell, in Reclamation Record. Heavy and clay soils require less water for maximum yields than sandy and gravelly soils. Where average conditions exist about 18 inches of water should mature grain well on clay soils; sandy or gravelly soils would probably require 30 or more inches for the same yields. This important fact should be borne in mind—the yield of both grain and straw increases with the application of water up to the amount which the plants need for their best development; if the application of water is continued above this point the yield of both grain and straw will decrease in proportion to the amount of excess water.

Some authorities have put forward claims to the effect that small grains will yield best by a certain program of alternating dryness and moisture. It is believed to be well for the average farmer not to experiment with any such theory, as it is a theory at the best and no one can say definitely just when the soil should be dry and when moist on every farm. The best plan for the farmer is to endeavor to keep available for the plants just as much water as keeps them in healthy growth and time his irrigations to the periods when the plants need the maximum amount of moisture.

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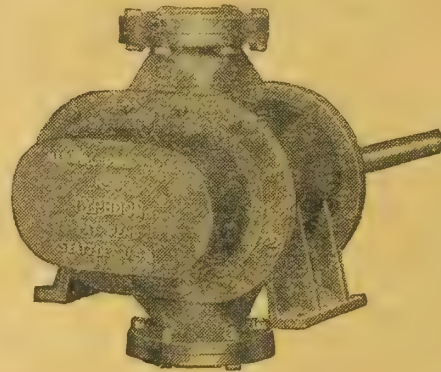
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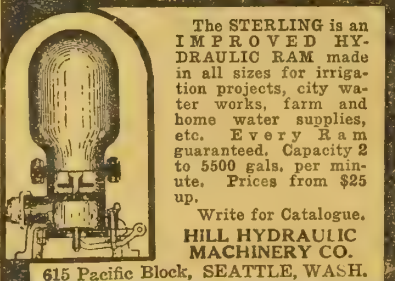


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**HILL HYDRAULIC  
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Send for circulars describing the Hill Hydraulic Air Compressor to the Northwest Machinery Co., 615 Pacific Block, Seattle, Wash.

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There are numerous kinds, some good others better, and one **BEST**. Write **THOS. J. ROSS**, Portland, Ore., who will tell you free of charge, of the **ONE BEST**. It is important to you. Make no mistake. Post yourself and have no regrets.

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with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 **REIERSON MACHINERY CO.**, Manfrs., Portland, Ore.

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## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. POMMERON

## THE MAKING OF MAN.

We knelt before kings; we bent before lords;  
For theirs were the crown, and theirs were the swords  
But, the times of the bending and bowing are past,  
And the day of the people is dawning at last.

We cringed before gold; we deified wealth;  
We laid on its altar the life and the health  
Of manhood and womanhood, childhood and youth;  
But its lordship is doomed in this day of the truth.

The strength of the State we'll lavish on more  
Than making of wealth and making of war;  
We are learning at last, though the lesson comes late,  
That the making of man is the task of the State.

Great Day of Jehovah, prophets and seers  
Have sung of Thy coming for thousands of years;  
Thank God for each sign that the dark night is past;  
And the day of the people is dawning at last!

—WILLIAM P. MERRILL.

## MEANING OF OUR FLAG.

In the seclusion of the National Cathedral school lawn, where he was presenting an American flag to the honor graduates, Justice Charles E. Hughes made his first public address since the opening of the pre-convention campaign. He told the young women graduates that the flag meant "America first, an undivided allegiance and a nation united and equal to its tasks."

"This flag means more than association and reward," said the justice, "it is the symbol of our national unity, our national endeavor, of our national aspirations. It tells you of the struggle for independence; of the Union preserved, of liberty and union one and inseparable; of the sacrifices of brave men and women to whom the ideals and honor of this nation have been dearer than life.

## "Means America First"

"It means America first; it means an undivided allegiance; it means America united strong and efficient, equal to her task; it means that you cannot be saved by the valor and devotion of your ancestors; that to each generation comes its patriotic duty; and that upon your willingness

to sacrifice and endure, as those before you have sacrificed and endured, rests the national hope.

"It speaks of equal rights; of the inspiration of free institutions exemplified and vindicated; of liberty under law intelligently conceived and impartially administered. There is not a thread in it but scorns self-indulgence, weakness and rapacity. It is eloquent of our common interests, outweighing all divergencies of opinion and of our common destiny.

"Given as a prize to those who have the highest standing, it happily enforces the lesson that intelligence and zeal must go together; that discipline must accompany emotion, and that we must ultimately rely upon enlightened opinion."

## HER HAPPIEST DAY.

"What is the happiest day in a woman's life?" asked one of a little group of women.

"Gracious! Don't throw that bone of conversation among us," exclaimed a young matron.

"The day she gets a \$150 fur coat for \$65," volunteered one of the party, flippantly.

"The day he slips a diamond ring on her finger," said the engaged girl, dreamily.

"No," broke in another, "the day he puts the wedding ring on. There's many a slip, you know."

"The day her first book is accepted by the best publishing house of the country," suggested the scribbler of the group.

"The day she first votes," said the ardent suffraget.

"You are all wrong," complacently remarked the young mother. "It's the day she first holds her baby in her arms."

"It's the day she lands a job, when she has been out of work for six months and borrowed from her friends until they go the other way when they see her coming," observed the practical business woman.

"It's every day when her husband comes home from business," contributed the bride.

"It's the day she sails for Europe the first time," volunteered the girl fond of travel.

"It's the day she doesn't have to attend a club meeting," remarked the tired-looking club woman.

"It's the day she finds a jewel of a cook, who promises to stay," said a housekeeper.

"Does that day ever come?" inquired a cynical friend.

"Which do you think is the happiest day in a woman's life?" asked one of the party, turning to a silver-haired grandmother, who had been listening, with an amused smile, to the various suggestions.

"There's such difference," she began, hesitatingly, "between pleasure and happiness. One may have many red-letter days, but the happiest day? In the truest sense of the world, it seems to me it would be the day when she comes to a realization that she can face the future without fear or lack of faith, the day when she knows without doubt or shadow of turning, that good is

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Why not get a good oil stove so that during the hot weather your wife or mother or sister or daughter, can prepare the meals in a cool, comfortable kitchen?

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No wood or coal or ashes to lug. No waiting for fires to catch up. The long blue chimneys do away with all smoke and smell. In 1, 2, 3, and 4-burner sizes, with or without ovens. Also cabinet models with Fireless cooking oven.  
**STANDARD OIL COMPANY**  
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## HOME MADE CAKES

are delicious - always so if you use

## CRESCENT BAKING POWDER



to raise the dough

ALL GROCERS 1 lb. 25c

Crescent Mfg. Co.  
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the strongest force in the universe, that joy is around her on all sides and in many forms, if she will but see it, and that the greatest joy of all awaits her when she joins her loved ones in the Far Country. I think the day when with shining face she knows that these are truths beyond disproving, and that they will lighten her path to her journey's end, is the happiest day in her life. And it is a happiness that abides."

And the light-hearted women in the group grew suddenly silent, for they knew she was one who had come through great tribulation.

Amelia Barr at the age of 80 wrote: He faileth not! What winds of God may blow

What safe or perilous way may be my lot,  
Gives but little care; for this I know,  
He faileth not!

"Sustained by this confidence I can face without fear the limitations of age and the transition we call death. I have love and friendship around me, I give help and sympathy wherever I can, and I do my day's work gladly. The rest is with God." There is the secret of her whole life—of any noble life—to do the day's work gladly.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### COW TESTING CONTINUES.

The good work of cow testing associations is becoming popular among the dairymen of Washington and this is a most hopeful sign for the building up of a large and profitable dairy industry.

It was a great surprise to dairy farmers in some parts of the state to find that so few of their cows produced over 40 pounds butter fat a month. In one association only about 10 per cent of the cows measured up to this mark. The owners at once dawned preparedness and are now in frequent consultation with the butcher and are constantly on the search for some good dairy sires.

At Walla Walla, nine pure bred sires have been purchased by members of the Walla Walla Valley Association since November first. County Agriculturist Patton reports that 10 per cent of cows in the association have already been condemned as "star boarders" and sold for beef.

April records in the Whitman County Cow Testing Association disclose 61 cows out of 302 on test on the "honor list" as having produced over 40 pounds of butter fat in a month. This is considerably better than the showing made a year ago the same month and clearly indicates that the standard of the herds is increasing, says Mr. Lashbrook.

At the newly organized cow testing association at Sunnyside, Washington, thirty-six members with over 500 cows began the work on the first of June. Harry Paul of Mabton, was elected president, D. J. Kelley, of

Sunnyside, vice president, and G. W. Huston, secretary and treasurer. Additional directors elected were O. W. Middleton and C. F. Peabody. The dairymen were assisted in their organization by Chester Farr, high school Agriculturist at Sunnyside, and R. N. Miller and A. J. Lashbrook, of the State College.

#### Good Record at Puyallup.

The Puyallup Valley Co-operative Cow Testers' Association, which tested 500 cows recently, found that 140 ranked over 40 pounds of butter fat a month. This is the best record of any cow association in the state and, so far as known, is the best in the United States. Dairymen who have extraordinary cows are J. J. Miller, C. W. Orton, John Snell and Walter Spinning. Some of their herds give as high as 50 pounds of butter fat a month.

At a recent meeting with the dairymen there, Prof. J. N. Price, of the Washington State college, gave a talk on feeding and the results obtained from different kinds of feed. "There must be a mixture of feed," he said, "For instance, no cow can do her best on just alfalfa and nothing else. There must be other foods with it. How long a cow can live on straw without showing signs of decreasing in the quality of the milk is sometimes a week or two, provided the cow was in good condition in the first place."

It was brought out that a cow must make \$120 a year or she is not profitable; a good cow should pay the taxes and upkeep of the dairy and the

### CHERRY DISHES

**Cherry Cobbler**—Line a deep square cobbler pan with good puff paste and fill nearly full with ripe cherries that have been carefully washed and stoned; add two full cups of sugar and bake. When done spread with a good meringue and let it brown a minute in the oven, then serve hot or cold, with or without cream, according to taste. Or a little cherry syrup may be made for sauce, flavoring it with any good flavoring liked.

**Cherry Fritters**—Make a good batter the same as for apple fritters, and add to it one cup of stoned cherries. Fry in hot fat, drain, sprinkle with powdered sugar and serve in a napkin hot.

**Cherry Pudding**—Have ready a deep pudding dish lightly buttered. Stone about five cups of cherries, draining them in a little white enamel sieve until needed. Take a pound of macaroons that are dry enough to roll; then place a layer of cherries, then a layer of macaroons, sugar and a dash of nutmeg; repeat this until the dish is nearly full, then add two beaten eggs, a half cup of milk and a cup of cream and a little vanilla flavoring. Bake a delicate brown. Add a rich deep meringue and serve cold.

**Cherry Pie**—This is an old fashioned recipe. Line a deep pie dish with good crust and fill with stoned cherries and a cup and a half of sugar. Make a lattice crust over the top and bake well. Serve hot.

### GARMENT PATTERNS

Order by number. See description below.



**1694—Ladies' Skirt**—Cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. It requires 3 1/4 yards of 44-inch material for a 24-inch size. The skirt measures 3 1/2 yards at the foot. Price, 10 cents.

**1710—Girls' Apron**—Cut in 5 sizes: 2, 4, 6, 8 and 10 years. It requires 2 1/4 yards of 36-inch material for a 5-year size. Price, 10 cents.

**1720—Ladies' Dress**—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Size 36 will require 6 yards of 44-inch material for a 36-inch size. The skirt measures about 3 1/2 yards at the foot. Price, 10 cents.

**1716—Ladies' Kimono**—Cut in 3 sizes: Small, Medium and Large. It requires 5 1/2 yards of 36-inch material for a Medium size. Price, 10 cents.

**1702—Girls' Dress**—Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 1 1/2 yards of 27-inch material for the guimpe, and 3 1/2 yards for the dress, for an 8-year size. Price, 10 cents.

**1721—Girls' Dress**—Cut in 4 sizes: 4, 6, 8 and 10 years. It requires 3 yards of 44-inch material for an 8-year size. Price, 10 cents.

**1706—Dress for Misses and Small Women**—cut in 3 sizes: 16, 18 and 20 years. To make as illustrated will require 4 1/2 yards of 44-inch material for full portions of skirt, vest, collar, sleeve extension and skirt yoke, and 3 1/2 yards for panels, sleeves, waist portions and drapery for an 18-year size. The skirt measures 3 1/2 yards at the foot. Price, 10 cents.

**1717—Ladies' Dress**—Cut in 6 sizes: 32, 34, 36, 38, 40 and 42 inches bust measure. It requires 6 yards of 44-inch material for a 36-inch size. The skirt measures about 3 1/2 yards at the foot. Price, 10 cents.

NORTHWEST HORTICULTURIST & DAIRYMAN  
Box 1604, Tacoma, Wash.

## TEST OF 21 YEARS

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## A. S. Johnson & Co.



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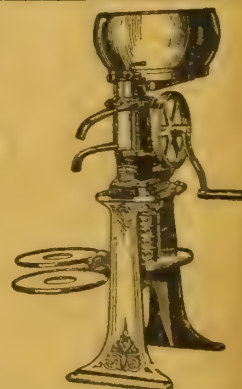
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Why! Because it is the latest invention and has so many improvements and features the others do not have.

**Don't fail to see how simple it is;** be sure to see its construction.

**Don't fail to get its record as the closest skimmer.**

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**Don't fail to see that new feature, the Self Balancing Bowl.**

**Don't fail to see the greatest of all oiling systems.**

**Don't fail to get reports of what users say about it.**

Write us for catalog on the Perfection Milker, the latest invention, the nearest like hand milking.

**THE J.C. ROBINSON CO.**

43 First St., Portland, Oregon



owner, and renew herself every six years to be profitable. About 50 per cent of the cows in the valley are doing this.

"If we do not make a profit we are working for fun or for charity," said W. J. Langdon, who presided at the meeting. "The only way we can cut the price of production is to weed out the cows that are 'boarders.'" Jefferson County Cow Testing Association.

A cow testing association has just been organized in Jefferson county through the co-operation of the members of the association, the county agriculturist, Mr. O. T. McWhorter, and Mr. O. E. Gibson, Dairy Extension Specialist, co-operating with the Extension Department of the State College and the U. S. D. A. Officers of the new association are: Dr. E. E. Hegg, Chimaicum, president; Mr. Jas. Maddox, Quilcene, vice president; Mr. Ed Griffith, Dabob, secretary, and Mr. Hugh Nesbit, Chimaicum, treasurer. The organization of this testing association was done in record time. The cow testing association, as nothing else, is proving of great value to the dairymen of this state.

#### KITSAP HOLSTEINS.

Kitsap County, Washington, has become famous for having the Government navy yard, now a large and growing institution, but it is not generally known that the dairymen here are developing some very productive dairy herds.

Mr. Robert Burt, the live Weyerhaeuser silo man, recently made a visit to the Springbrook Farm, Manette, owned by John Carlson, and was surprised to find pure bred Holsteins of noted production. A three-year-old heifer had just completed a record of 100 pounds butter in 60 days and a cow on yearly test is making 25 pounds butter a week.

The heifer is a full sister to Paul Mooie Fayne, the sire that heads the herd on this place. He is a son of the famous bull, Ollie Johanna Sir Fayne 59096, which is sired by Sir Johanna Fayne. Holstein breeders everywhere know of the outstanding character of these noted sires. The A. R. O. records of their many daughters would require pages to describe. The dam of Mr. Carlsons bull is Maude Piebe Mooie, which had a record at 3-year-old of over 22¼ pounds butter in seven days. Her maternal grandsire has 34 A. R. O. daughters and 15 A. R. O. sons with larger records back.

It was by rare chance that Mr. Carlson obtained so valuable a sire and the importance of the use of this class of breeding stock is becoming more fully appreciated in his community with every added year. In this herd are a number of registered cows closely related to the famous Canary Mercedes, which sold at the H. C. Davis sale for \$1800.

The value of this herd to its owner and to his community is like a little gold mine because under ordinary care and preparedness for economical feeding, there is a margin of profit to be derived regularly as each day passes.

A few young bulls excellently bred and with quality backing for heavy production are ready to be sold and available for other enterprising dairymen. When used on grade cows, bulls of this class will improve the future dairy herd. There is no in-

vestment dairymen who have ordinary grade cows can make which is of greater importance than the purchase of a pure bred sire whose records are satisfactory. After having chosen the breed, continue in line and do not engage in costly experiment by trying to cross with sires from different dairy breeds, but keep building up instead of falling down.

#### PASTEURIZED SKIM MILK.

At least two states have laws requiring skim milk to be pasteurized before it is returned from any central plant where milk and cream are separated for feeding purposes, says the U. S. Department of Agriculture. In Denmark a law of this kind has been enforced for many years.

The advisability of pasteurization was illustrated during the recent outbreak of foot-and-mouth disease in the United States. At a certain creamery in New York State raw skim milk was being returned to seven patrons. Later, five of these patrons were found to have foot-and-mouth disease in their herds. Of the other two, one boiled the milk before he fed it and the other threw it away for fear of possible infection. It appears very probable that the disease was spread by feeding raw skim milk from a diseased herd.

At another creamery in the same State skim milk was being returned to 30 patrons, but in this case the milk was pasteurized properly before being returned. Foot-and-mouth disease was discovered in the herd of one of these patrons and in the judgment of the inspectors, the disease had then been present for at least five days. During this time the milk had been taken to the creamery and pasteurized skim milk returned to the 30 patrons. The disease, however, did not appear on any of the other farms. Had the skim milk not been pasteurized at this creamery, it is possible that the disease would have been carried, by way of the creamery, from the one infected farm to all the rest of the 30 farms.

Skim milk, buttermilk, and whey may be pasteurized at a fuel cost of about 2½ cents for every 1,000 pounds—a cost that is negligible when compared to the financial loss that may result from feeding the products raw.

Skim milk, buttermilk and whey may be heated by the use of steam jets while being elevated into a tank. This practice, however, causes the milk solids to "cook" on to the interior of the pipe and cleaning is difficult. If cleaning is properly done each day, however, this method is not objectionable.

The simplest method of pasteurization may be to turn steam directly into the liquid in the tank until the desired temperature is reached. In this case a temperature of not less than 145 degrees F. should be maintained for a half hour. When, however, it is desirable to draw milk or whey from the tank as it is running in, it becomes necessary to complete the pasteurization before the product reaches the tank. This can readily be done by running a steam pipe into the skim milk, buttermilk or whey pipe near the tank. A device of this kind is on the market and is known as a skim-milk pasteurizer. When this method is used the skim milk or whey should be heated to a temperature of 180 degrees F.

As creamery and cheese-factory by-

# 98% Of the World's Creameries

## Separate their cream with a

# DE LAVAL

TEN YEARS AGO THERE WERE A DOZEN DIFFERENT MAKES of creamery or factory separators in use. Today over 98 per cent of the world's creameries use De Laval Separators exclusively.

IT MEANS A DIFFERENCE OF SEVERAL THOUSAND DOLLARS a year whether a De Laval or some other make of separator is used in a creamery.

EXACTLY THE SAME DIFFERENCES EXIST, ON A SMALLER scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep as accurate records as the creameryman, or test their skim-milk with the Babcock tester, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents.

NOW IF YOU WERE IN NEED OF LEGAL ADVICE, YOU WOULD go to a lawyer. If you were sick you would consult a doctor. If you had the toothache you would call on a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgment and skill.

WHEN IT COMES TO BUYING A SEPARATOR WHY NOT profit by the experience of the creameryman which qualifies him to advise you correctly? He knows which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries and milk dealers use the De Laval exclusively.



THERE CAN BE NO BETTER RECOMMENDATION for the De Laval than the fact that the men who make the separation of milk a business use the De Laval to the practical exclusion of all other makes of cream separators.

Your local De Laval agent will be glad to let you try a De Laval for yourself on your own place. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

## DE LAVAL DAIRY SUPPLY CO.

SAN FRANCISCO

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Moxee Valley Holstein Farm

There is now a rising market for good dairy cattle, but on account of spring floods here have decided to decrease our herd of

### 40 HEAD OF LARGE TYPE HOLSTEINS

They were all tested for tuberculosis on March 28 by Dr. Robt. Prior and all proved sound. Anyone wishing stock with good records should not fail to get full particulars about this herd which is one of the best at practical dairy work in the country.

Inquiries cheerfully answered or make appointment to call and see the cattle.

## TYSON & McKELHEER

Moxee City, Wash.

# GUERNSEYS

## Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.

A. L. Gile, Prop.



products may, under certain conditions, be agencies in spreading livestock diseases, and as pasteurization of these products is a preventive measure that is easily and cheaply effected, the adoption of this practice by all creameries and cheese factories is earnestly recommended by the department.

### CARE OF CREAM.

During the hot days of spring and summer the farmer who is selling cream to the creamery finds it a problem to keep his cream in the proper condition. However, there are but a few simple rules which should be followed, that would result in better cream. First of all these is cleanliness. Dirt, remember, carries bad flavors. If the barn or its surroundings and cows are dirty it will result in poor milk; poor milk results in poor cream; poor cream result in poor butter.

Immediately after separating, the cream should be cooled down to at least 50 degrees F. Warm cream should never be poured upon cold as the temperature of the lot is raised and bad flavors may result. It is essential that the cream be stirred frequently to insure uniform ripening. If the cream is left undisturbed, the fat rises the same way as it does in milk. As a result the cream is full of curd particles or it becomes "lumpy."

Never put cream in a rusty or battered can and always remember that milk and cream have that property of absorbing bad flavors.—W. B. COMBS, Missouri College of Agriculture.

### BASIS VALUE OF COWS.

According to good authority a cow costing \$80 should produce 352 pounds of butter a year when butter fat is 30 cents and her feed cost is \$90 in order to produce any profit. But the cow which yields 400 pounds of butter at same market price and same cost for feed is worth \$150. The 430 pound butter cow on same basis is worth \$200, while the 500-pound cow at same cost for feed and market for butter is worth \$300. It pays to breed up.

### SANITARY MILK.

Dr. R. D. Wilson, proprietor of Fir Oaks Farm, on the American Lake railway line, Tacoma, started in a couple of years ago to provide a nutritious, digestible and clean milk for the babies in Tacoma. He has been very careful in the selection of his herd, mostly Holsteins, and the health officers report his product

well above the limits of a certified milk in bacterial count; and it is delivered in bottles neatly labeled. The result is a growing trade much faster than was anticipated at prices which returns a very fair margin of profit for the investment involved and the efforts bestowed.

### PASTEURIZING CREAM.

The city creameries in the Northwest are taking the forward step inaugurating the pasteurizing system for cream in order to obtain a more uniformly high grade butter which will have keeping quality and that will be above question so far as tubercular inspection is concerned. Those county creameries which have not already adopted this system no doubt will profit by like progress. In the old countries where butter has become a staple for heavy export, the pasteurizing practice has been in vogue for years, and naturally it is becoming the universal system in this part of the country.

The first pasteurized butter made in a commercial way in the United States was manufactured and marketed by the firm of Jensen Bros., operating creameries in Kansas, in 1898.

Pasteurization gives flavor and keeping quality to butter. It is recognized that pasteurized butter is the only butter that will keep and give satisfaction, packed in tins, or in any package, for the Orient or South American trade—a trade that in the past was going largely to Denmark and Holland, because in those countries pasteurization has been compulsory and followed for many years by all creameries.

### Urges Compulsory Law.

"I hope," said Mr. Jensen, recently, "that pasteurization will become compulsory in Washington. In a few years this state must look to foreign countries and the Eastern states to take a big share of the butter production, and we can only hope to gain foreign and Eastern markets by having for the main standard high grade quality, absolutely pure. Let me further hope that Washington will follow the lead of California, and that the next Legislature will make pasteurization compulsory in the State of Washington. The raising of the standard in purity and flavor of a state's product will benefit the state as a whole, from the standpoint of the results obtainable in general health, in the keeping down of contagious diseases. In good reputation for the state, all of the people in the state have gained."

## Whole Milk Values Compared With Butter Fat and Skim Milk

BY A. B. NYSTROM, PROFESSOR OF DAIRY HUSBANDRY, STATE COLLEGE, PULLMAN, WASH.

The future of the dairy industry will depend upon our ability to build up and maintain a profitable dairy herd. This cannot profitably be done by purchasing the other fellows' heifers and raising them, for very likely he will sell his culls and keep the best for himself. We must depend upon raising the heifer calves ourselves, and this regardless of what disposition we make of the milk.

It sometimes seems absurd to put a monetary value on skim milk when it is used for feeding dairy calves. The fact is that so far as building up a dairy herd is concerned skim milk is almost indispensable and a very high value should be placed on it when used as such.

In comparing the prices received for whole milk with those for butterfat in cream the value of the skim milk should always be considered. Too often

### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

**A. E. SMITH CO., Sumas, Wash.**  
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### PUGET SOUND HERD HOLSTEINS

Production as well as Individuality  
Home of the Worlds Record Milch Cow

|                                            | One year<br>Butter. | One year<br>Milk. |
|--------------------------------------------|---------------------|-------------------|
| Lutscke Vale Cornucopia .....              | 998.6               | 31,239.2          |
| Gettie De Kol .....                        | 1,082.4             | 23,471.9          |
| Chimacum Wayne Boon 2d, 2-year-old .....   | 882.2               | 21,581.1          |
| Sena De Kol Ononis, 3-year-old .....       | 846.2               | 20,572.9          |
| Forum Quirinus Gold Leaf, 2-year-old ..... | 747.7               | 17,637.7          |

This is a sample of a few of our yearly records. Young stock for sale.

**WM. BISHOP, Chimacum, Wash.**



### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

Korndyke Beet's DeKol, 547.2 lbs. milk, 29,311 lbs. butter 7 days. Our own breeding.

**HERMAN STEFFEN**  
MONROE, WASH.

### Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

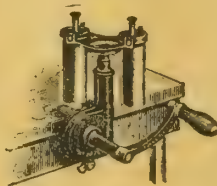
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NORTH YAKIMA, WASH.

## Waikiki Farm

Breeders of  
**JERSEY and Ayrshire Cattle**  
**Duroc Jersey Swine**  
**Shropshire Sheep**

**IRA P. WHITNEY, Supt.**

**Route 7, Spokane, Wash.**



### Over 5000 Dairy Cows

are being tested for butter fat in this state today. All progressive dairymen are ascertained what amount of net profit each cow produces. The Babcock tester and scale are the necessary instruments. We can send them by parcel post. Get our catalog for prices and sizes. It contains a list of high quality dairy supplies the kind which afford satisfaction.

### Poole's Seed and Implement Co.

1507 Pacific Ave.

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### Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**

N. P. Wharf, Tacoma, Wash.

### High Quality Feeds

Shorts, middlings, bran. Dairymen should get our prices now per ton or car lots. We also manufacture Hen and Chick Foods. All cereals.

**Keystone Cereal Company**

2311-17 Jefferson Ave.,

Tacoma, Wash.



there is a feeling that the skimmilk has no food value, but when we consider that only the fat has been removed we can readily see that skim milk has nearly as much feeding value as whole milk.

In the accompanying table the value of 100 lbs. of milk of different richness has been calculated for different value of butter-fat, but with a standard price of 30c per 100 lbs. for the skimmilk. From 100 lbs. of whole milk we should get about 85 lbs. of skim milk, the remainder being cream which goes to the creamery.

The table shows for example that when butter-fat sells for 35c per lb., 100 lbs. of 4% milk will bring \$1.65 if sold to the creamery in the shape of cream. The skimmilk being left on the farm. When the whole milk is sold as such it should bring that price or more.

VALUE OF 100 POUNDS OF MILK OF DIFFERENT PERCENTS OF FAT COMPARED WITH THE VALUE OF FAT AND SKIMMILK.

| B. F. @      |       | 25c    | 26c    | 27c    | 28c    | 29c    | 30c    | 31c    | 32c    | 33c    |
|--------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Test of Milk |       |        |        |        |        |        |        |        |        |        |
| 3.0          | ..... | \$1.00 | \$1.03 | \$1.06 | \$1.09 | \$1.12 | \$1.15 | \$1.18 | \$1.21 | \$1.24 |
| 3.2          | ..... | 1.05   | 1.09   | 1.12   | 1.15   | 1.18   | 1.21   | 1.25   | 1.28   | 1.31   |
| 3.5          | ..... | 1.13   | 1.16   | 1.20   | 1.23   | 1.27   | 1.30   | 1.34   | 1.37   | 1.41   |
| 3.6          | ..... | 1.15   | 1.19   | 1.22   | 1.26   | 1.29   | 1.33   | 1.37   | 1.40   | 1.44   |
| 3.7          | ..... | 1.18   | 1.21   | 1.25   | 1.29   | 1.32   | 1.36   | 1.40   | 1.43   | 1.47   |
| 3.8          | ..... | 1.20   | 1.24   | 1.28   | 1.31   | 1.35   | 1.39   | 1.43   | 1.47   | 1.50   |
| 3.9          | ..... | 1.23   | 1.26   | 1.30   | 1.34   | 1.38   | 1.42   | 1.46   | 1.50   | 1.54   |
| 4.0          | ..... | 1.25   | 1.29   | 1.33   | 1.37   | 1.41   | 1.45   | 1.49   | 1.53   | 1.57   |
| 4.1          | ..... | 1.28   | 1.32   | 1.36   | 1.40   | 1.44   | 1.48   | 1.52   | 1.56   | 1.60   |
| 4.2          | ..... | 1.30   | 1.34   | 1.38   | 1.43   | 1.47   | 1.51   | 1.55   | 1.59   | 1.64   |
| 4.3          | ..... | 1.33   | 1.37   | 1.41   | 1.45   | 1.50   | 1.54   | 1.58   | 1.63   | 1.67   |
| 4.4          | ..... | 1.36   | 1.39   | 1.44   | 1.48   | 1.53   | 1.57   | 1.61   | 1.66   | 1.70   |
| 4.5          | ..... | 1.38   | 1.42   | 1.47   | 1.51   | 1.56   | 1.60   | 1.65   | 1.69   | 1.74   |
| 4.6          | ..... | 1.40   | 1.45   | 1.49   | 1.54   | 1.58   | 1.63   | 1.68   | 1.72   | 1.77   |
| 4.7          | ..... | 1.43   | 1.47   | 1.52   | 1.57   | 1.61   | 1.66   | 1.70   | 1.75   | 1.79   |
| 4.8          | ..... | 1.45   | 1.50   | 1.55   | 1.59   | 1.64   | 1.69   | 1.74   | 1.79   | 1.83   |
| 5.0          | ..... | 1.50   | 1.55   | 1.60   | 1.65   | 1.70   | 1.75   | 1.80   | 1.85   | 1.90   |

| B. F. @      |       | 34c    | 35c    | 36c    | 37c    | 38c    | 39c    | 40c    | 41c    | 42c    |
|--------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Test of Milk |       |        |        |        |        |        |        |        |        |        |
| 3.0          | ..... | \$1.27 | \$1.30 | \$1.33 | \$1.36 | \$1.39 | \$1.42 | \$1.45 | \$1.48 | \$1.51 |
| 3.2          | ..... | 1.34   | 1.37   | 1.41   | 1.44   | 1.47   | 1.50   | 1.53   | 1.57   | 1.60   |
| 3.5          | ..... | 1.44   | 1.48   | 1.51   | 1.55   | 1.58   | 1.62   | 1.65   | 1.67   | 1.72   |
| 3.6          | ..... | 1.47   | 1.51   | 1.55   | 1.58   | 1.62   | 1.65   | 1.69   | 1.73   | 1.76   |
| 3.7          | ..... | 1.51   | 1.55   | 1.58   | 1.62   | 1.66   | 1.69   | 1.73   | 1.77   | 1.80   |
| 3.8          | ..... | 1.54   | 1.58   | 1.62   | 1.66   | 1.69   | 1.73   | 1.77   | 1.81   | 1.85   |
| 3.9          | ..... | 1.58   | 1.62   | 1.65   | 1.69   | 1.73   | 1.77   | 1.81   | 1.85   | 1.89   |
| 4.0          | ..... | 1.61   | 1.65   | 1.69   | 1.73   | 1.77   | 1.81   | 1.85   | 1.89   | 1.93   |
| 4.1          | ..... | 1.64   | 1.69   | 1.73   | 1.77   | 1.81   | 1.85   | 1.89   | 1.93   | 1.97   |
| 4.2          | ..... | 1.68   | 1.72   | 1.76   | 1.80   | 1.85   | 1.89   | 1.93   | 1.97   | 2.01   |
| 4.3          | ..... | 1.71   | 1.75   | 1.80   | 1.84   | 1.88   | 1.93   | 1.97   | 2.01   | 2.06   |
| 4.4          | ..... | 1.75   | 1.79   | 1.83   | 1.88   | 1.92   | 1.97   | 2.01   | 2.05   | 2.10   |
| 4.5          | ..... | 1.78   | 1.83   | 1.87   | 1.92   | 1.96   | 2.01   | 2.05   | 2.10   | 2.14   |
| 4.6          | ..... | 1.81   | 1.86   | 1.91   | 1.95   | 2.00   | 2.04   | 2.09   | 2.14   | 2.18   |
| 4.7          | ..... | 1.85   | 1.90   | 1.94   | 2.00   | 2.04   | 2.08   | 2.13   | 2.18   | 2.22   |
| 4.8          | ..... | 1.88   | 1.93   | 1.98   | 2.03   | 2.07   | 2.12   | 2.17   | 2.22   | 2.27   |
| 5.0          | ..... | 1.95   | 2.00   | 2.05   | 2.10   | 2.15   | 2.20   | 2.25   | 2.30   | 2.35   |

Keep this valuable table for future reference.



"The true Jersey cow," remarks Prof. Hugh G. Van Pelt, "is the dairy cow plus Jersey type and beauty." She possesses the five essential points of the successful dairy cow.

- 1.—Hardy constitution.
- 2.—Great capacity.
- 3.—An active temperament that enables her to convert raw materials into milk and butter fat.
- 4.—A tremendous flow of blood to the milk organs.
- 5.—The ability to produce largely and persistently at regular intervals.

The name of Sophie 19th of Hood Farm, the world's champion Jersey cow, has become a household word throughout dairymen. Her six years' record of 75,920.8 lbs. of milk, 5,217 lbs. of 85 per cent. butter still stands unparalleled in dairy history.

But an even more important if less spectacular indication of Jersey progress is shown by the records of the

Register of Merit in the official statement of The American Jersey Cattle Club, as follows:

"In testing, the logical course of events is for the average production of a breed to decrease as the number of cows tested increases, due to the fact that, year after year, it is becoming the custom to test entire herds, rather than only the best individuals.

"During the last two years over 2,500 tests were accepted by The American Jersey Cattle Club, or almost as many as were accepted from the establishment of the Register of Merit, on May 6, 1903, to Feb., 1914, a period of ten and one-half years.

"In spite of the big influx of tests, the average milk, fat and percentage of fat from Jerseys has steadily increased! this fact is very significant.

"On Feb. 2, 1914, 2,720 year records had been accepted. These records

# Only \$2 DOWN and One Year To Pay

**For any Size—Direct from Factory**

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

## \$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

**Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame — Open Milk and Cream Spouts.**

**30 DAYS' FREE TRIAL GUARANTEED A LIFETIME**

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

**Albaugh-Dover Co., 2187 Marshall Blvd., Chicago, Ill.**

No. 5 1/2 Over 75,000 now in use

were made by 1,015 two-year-olds, 516 three-year-olds, 299 four-year-olds and 890 mature cows, and the average of all tests was 7,673 lbs. of milk containing 408.85 lbs. fat with an average of 5.33 per cent fat.

"February, 1915, found the average of 3,708 tests of all ages, 7,774 lbs. of milk containing 413.95 lbs. fat. These 1,006 additional records show increased averages of 101 lbs. milk and 5.1 lbs. butter fat.

This wonderful breed of cattle originated, as is well known, on the little Island of Jersey, which lies in the English Channel some thirteen miles off the coast of France.

The practice of the Jersey farmers is to keep their cattle in the open air during the greater part of the year. This bracing salt air has produced a vigorous, hardy race of cattle.

#### GUERNSEY BULL AVAILABLE.

Mr. S. M. Shipley, Seattle, Wash., has concluded to dispose of his fine young Guernsey bull, said by leading judges to be one of the finest young Guernsey sires on the Coast. He is out of Imported Galaxy Sequel and his dam is Gulnor 20th, a daughter of the greatest show cow in England. In her first lactation period beginning at 21 months of age, she produced 7800 lbs. milk and 405 lbs. butter fat, average test 5.59 per cent. Her second record was over 600 pounds fat.

This young bull is of marked show type, fawn with white markings, very mellow hide. His sire, Galaxy's Sequel, has more advanced registry daughters than any other Guernsey bull. He is at Plateau Farm, on Vashon Island, at the present time, and ought to be kept in that district for the development of pure-bred Guernsey cattle.

#### HOLSTEIN FRIESIAN ASSOCIATION.

The annual meeting of the Holstein-Friesian Association of America was held at Detroit on the 7th day of June. This association represents a life membership of about 9,000 persons residing in all parts of the United States and engaged in the breeding of Holstein-Friesian cattle, of which it is now estimated that there are something over 300,000 in the United States, owned by approximately 30,000 people. Of the associations engaged in improving the breeds of dairy cattle, this is the largest in

#### Jersey Bulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen. Write for further particulars. Health assured.

**EDWIN PETTETT**  
Dungeness, Wash.

#### GUERNSEY BULL FOR SALE

My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnor 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

**M. S. Shipley, Proprietor**  
PLATEAU FARM,  
Haller Bldg. Seattle, Wash.

#### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Units, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

**C. G. HENKEL,**  
Opportunity, Wash.

#### DARK FAWN JERSEY BULL CALF

Born October 28, 1915. Dam in Register of Merit with record of 7771 lbs. milk, 494 lbs. 7 oz. butter in year from three teats; sire's dam 598 lbs. butter. Calf is a good individual and backed by good records made under ordinary farm conditions. Price \$75.

**David C. Dilworth** Buckeye, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1 Lynden, Wash.



the world, and was first organized in 1871.

It has in cash on hand \$215,390.88, and an annual income of \$230,806.28.

Today a mature cow, to be a champion, must produce more than 44.42 lbs. butter in 7 days and more than 1,506 lbs. in a year. A two-year-old cow must produce more than 31.4 lbs. butter in 7 days and 1,200 lbs. in a year to be a champion. Entries in the Advanced Registry for the year exceeded 12,000.

The report of Secretary F. L. Houghton, of Brattleboro, Vermont, indicated the largest annual business yet transacted. It showed an accession to membership during the year of 1,260 life members, bringing the total up to 8,885. Registrations of cattle to the number of 72,665 were entered upon the herd register and 68,766 transfers were made.

An appropriation of \$25,000 was expended for publicity during the year; Volume 33 of the Herd-Book was printed and distributed, Volume 34 is being printed, and Volume 35 is in process of preparation for print.

The report of the Superintendent of Advanced Registry, Mr. M. H. Gardner, Delavan, Wis., showed 12,882 cows under test during the year, for milk and butter yields, averaging 408 lbs. of milk and 14.40 lbs. of butterfat in 7 days.

The largest butter record of the year was that of a cow owned in New York state, named Ormsby Jane Segis Aaggie, with a yield of 35.53 lbs. butterfat in 7 days.

The largest record for one year was made by a cow owned in Minnesota, named Duchess Skylark Ormsby, the yield being a world's record for all breeds of 1,205.09 lbs. butterfat.

Prize money to the amount of \$15,000 was awarded.—F. L. HOUGHTON, Secretary, Brattleboro, Vt.

### GUERNSEY CATTLE INCREASING.

The Annual Meeting of The American Guernsey Cattle Club.

The annual meeting of The American Guernsey Cattle Club was held in New York City on May 10th.

The report of the Secretary and Treasurer presented a most prosperous condition of the Club's business. In reviewing the work of the fiscal year ending April 29, 1916, there is much to encourage the belief that the Guernsey cow is now in the front rank of dairy animals.



The Holstein cow Gettie De Kol No. 102825, 8 years old, produced in 365 days 23,471.9 pounds milk and 1082.7 lbs. butter, which is the highest butter record for a Holstein cow one year, in this state. She is in the Puget Sound herd, owned by Wm. Bishop, Chimacum, Wash, who has the world's record cow for milk, shown last month. What is coming next in this or any other herd in the Pacific Northwest?

There are now 530 active members of the Club, this year showing a gain of 64.

Register of bulls now number 37862 and cows 63954, making a total of 101,816. From this it will be seen that they have now passed the one hundred thousand mark. In this connection the following data will be interesting. Five years ago there were but 44286 animals. This means that in five years the Herd Register has gained 130 per cent. Ten years ago there were only 31481, twenty years ago 13327, while in 1894, when the present Secretary was chosen, there were only 11029 recorded.

#### Re-Entries.

Four seventy-three cows have two yearly records; 73 cows have three yearly records; 10 cows have four yearly record; 1 cow has five yearly records.

The last cow is Selma of Pinehurst 4th No. 25703 A. R. 1235, whose records average 9878.24 lbs. milk and 501.02 lbs. butter fat.

The following officers were elected:

President, Mr. Jas. Logan Fisher, Olney P. O., Philadelphia, Pa.

Vice-Presidents—Mr. W. D. Hoard, Fort Atkinson, Wis.; Mr. S. M. Shoe-maker, Eccleston, Md.

Secretary and Treasurer—Mr. Wm. H. Caldwell, Peterboro, N. H.

### COWS IN MONTESANO ASSOCIATION.

For the month of April 48 cows in the Montesano Association produced over 40 pounds of butter fat. One grade Jersey has given 350 lbs. of fat during the first six months of her lactation period and a pure bred Jersey gave 300 pounds fat during the last six months of her milking period. Mr. R. W. McKenna, the tester, states that the hard winter and shortage of feed has been a great drawback to high records. A little grain or concentrate along with the scant pasture of the late spring, has helped materially.

The prizes offered by the Aberdeen Chamber of Commerce for highest production of grade and of pure bred cows went to J. H. Taylor and Murphy Bros. respectively. The testing association has helped to fix a correct valuation of each of the many cows tested.

### STOCKMEN We Cure and Remove TUBERCULOSIS

IN CATTLE. DON'T DESTROY YOUR ANIMALS. RESTORE AND PROTECT THEM WITH KAR-NITUM. WRITE US NOW. Kar-Ru Chemical Co., Tacoma, Wash.

#### HOLSTEINS

Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

CLOVERIDGE FARM, Seghers, Oregon. W. K. Newell.

#### GUERNSEYS

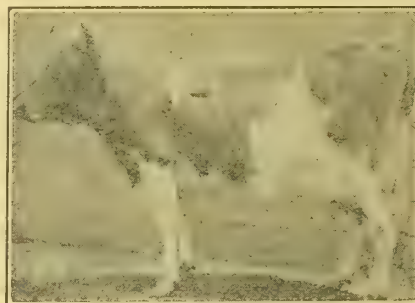
55 head of high grade and pure bred everything from calves to cows and herd bulls. Will not sell a portion of herd.

C. G. Henkel, Opportunity Wash.

#### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor  
Montesano, Wash.



### Registered GUERNSEY CATTLE BERKSHIRE SWINE

Some choice stock for sale. Your inquiry will have prompt attention. Write today.

FISHERBROOK FARM  
Box 34, Milltown, Wash.

#### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

#### Prices

For Ten Cows, Size 10x17½ in.

6 Sheets for \$ .25, Postpaid  
15 Sheets for \$ .50, Postpaid  
25 Sheets for \$ .75, Postpaid  
50 Sheets for \$ 1.25, Postpaid  
100 Sheets for \$ 2.00, Postpaid

Address

Northwest Horticulturist and Dairyman  
P. O. Box 1604 Tacoma, Wash.

### BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low priced, fresh, reliable; preferred by Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkge. Blackleg Pills \$1.00 50-dose pkge. Blackleg Pills 4.00 Use any injector, but Cutter's best. The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only. Insist on Cutter's. If unobtainable, order direct. THE CUTTER LABORATORY, Berkeley, California.

**BERKSHIRES**  
HEREFORDS-JERSEYS  
BARRED ROCKS  
SILVER BIRCH FARMS  
BOX 3 NEWPORT, WASH.

#### WE BUY MOLE PELTS

Good wages can be made trapping them. We are the only fur firm in the world offering a market for these skins. Write for special prices.

WE WANT 100,000 SKINS AT ONCE

BACH FUR CO.

Dept. O, Chicago, Ill.

### GOATS

Toggenberg Milk Goats, breeding stock—both does and bucks for sale  
PERLANDS FARM, Lakeview, Wash.

### HIDES WOOLS - PELTS FURS - TALLOW

HIGHEST CASH PRICES PAID  
PROMPT RETURNS—HONEST WEIGHT  
WRITE FOR PRICE LIST AND SHIPPING TAGS

Hibbard-Stewart Co Inc. Seattle  
Please Mention This Paper

#### RIDGEVIEW FARM

##### DUROC JERSEY HOGS

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

ROBERT NELSON

Route 2 North Yakima, Wash.

### Berkshire Pigs For Sale Boar Pigs

Sired by the celebrated boar Laurel Champion Farrow Dec. 1915 Extra choice and gurranteed.

Write for Prices

Avalon Stock Farm Dockton, Wash.

**SILVER BIRCH FARM**  
**BERKSHIRES**  
WRITE FOR CATALOGUE  
CHAS. M. TALMADGE  
R 1 Box 3 NEWPORT, WY.

#### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

North Yakima, Wash.

Registered

### Poland China Pigs

out of large litters from big prolific sows and a big well bred sire. Some February pigs that are fine. Prices reasonable and satisfaction guaranteed.

ROY MINTER,

Castle Rock, Wash.

WANTED—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

### Salmon Faverolls

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

Island Nurseries & Fruit Farm

S. J. Harmeling & Son,  
Vashon, Wash.

**CHUBBUCK'S IDEAL GOPHER TRAP**  
Larger than runway; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's will send it to you, postpaid; 2 for 95c; 6 for \$2.50; 12 for \$5.00. Money back if you are not satisfied. Free circulars. E. J. Chubbuck Co., Dept. N San Francisco, Cal.



**COOPER SALE OF JERSEYS.**

A \$641 Average Obtained for 126 Head.

Messrs. T. S. Cooper and Sons' Decoration Day sale of Jerseys was held under ideal conditions, at Coopersburg, Pa., the home of the Linden Grove herd.

The sale proved to be one of the most successful sales of dairy cattle on record. One hundred and twenty-six Island bred Jerseys sold for an average of \$641.19. The first fifty sold averaged over \$900, while the first eighty-five averaged over \$800.

nine cows sold for sums \$2000 and over, as follows:

Oxford's Wexford Spot, Brookwood Farm, Barryville, N. Y., \$3,000; You'll Do's Champion Ivy, Brookwood Farm, Bristol, R. I., \$3,000; Raleigh's Finance, Colt Farm, Bristol, R. I., \$2,700; Sultana's Veronia, Colt Farm, Bristol, R. I., \$2,400; Dorothy's Noble Fern, Brookwood Farm, Barryville, N. Y., \$2,200; Oxford Dawish, Colt Farm, Bristol, R. I., \$2,100; Jennie You'll Do, Brookwood Farm, Barryville, N. Y., \$2,000; You'll Do's Pretty Pet, Brookwood Farm, Barryville, N. Y., \$2,000; Boutilliere's Oxford Girl, Colt Farm, Bristol, R. I., \$2,000.



**GOLDEN WINNIE'S COUNT 105989, A-J. C. C., AT WAIKIKI.**

This sire has been in service in the Waikiki Farm herd for the past three years and is giving an excellent account of himself. His calves have been consistent prize winners at the Spokane Inter-State Fair for the past two years, and his heifers are showing great production ability. Two of his daughters are already in milk and they are making good. We believe we made no mistake when we selected him to head our herd of registered Jerseys.—IRA P. WHITNEY, Super-intendent.

**BREWER'S JERSEY WINNERS**

Another cow of the famous Jersey herd of Mr. E. L. Brewer, Satsop, Wash., has made a winning record. Golden Queen produced during the 12 months, 12236 pounds milk, 876.8 lbs. butter with average test of 6 per cent. This young cow's record brings her owner a medal awarded by the state.

**CONCRETE STAVE SILO.**

The Brooks Patent Concrete Stave Silo has come into very general use in some of the eastern states. It is made of cement concrete blocks put into place something like the wooden stave silo. An iron band covers the broken joints and a solution is applied to make it water and air tight, and acid proof. Arrangements have been made for the manufacture of this silo in Washington. The office of the Brooks Concrete Stave Silo Company at 515 Hoge Bldg., Seattle, Wash.

**SELECTING BROOD SOWS.**

By Roy Minter.

The selection of breeding stock is a very important matter and the exercise of good judgment and insight may mean a difference of fifty or one hundred per cent in the net returns and ultimate profits.

One of the first things I want to know before buying pigs for breeders is how pigs were in the litter and how large a litter was the sow and sire from, for although most breeders admit that six or eight pigs are enough for a sow to raise and raise them right, still we all like prolific sows and as they do not usually raise all

they start with we prefer to have them start with a good sized litter and then if the sow lays on or steps on two or three and a weak one is crowded out and fails to survive there will still be enough left.

So if we want large litters we should select breeders from large litters. Taking it for granted that when a breeder selects a young brood sow he expects to keep her through her period of usefulness and will get eight to ten litters from her, then a difference of two pigs to the litter would mean sixteen to twenty more pigs from the prolific sow—certainly an item worth taking into consideration.

I do not claim that the number of pigs a sow has in a litter depends entirely upon whether or not she was from a prolific family, for I believe the size of the litter is also controlled by the condition of the sow and the care and feed she is getting at breeding time. I believe in feeding liberally at breeding time and would rather have the sow fat than too thin. Most breeders prefer pigs from mature sows for they will usually grow a little faster and are capable of greater development than pigs from gilts unless the gilts are fourteen months old or more when they farrow. Furthermore pigs for breeders should be selected from tried sows, and a sow cannot be judged conclusively by her success with her first litter. I have a fine brood sow that only had two her first litter and the next litter had eight and raised all of them, but the sire of the first litter was the one at fault for he was a young hog that proved to be worthless as a breeder. Select pigs with large strong legs and a good strong arched back and broad shaped head. To develop into a large hog a pig must be kept growing every day the first four months. If you get a pig four months old that is large and well developed for its age it is easy to keep it growing, but if it is only about half as large at that age as it should be I would consider it a hopeless case if I was looking for a pig I could grow into a large hog.

Get good breeding stock and grow them right and you will have something that will make you money, for hogs are getting to good prices now and there is every indication that they will continue to be high for considerable time.

Our chief want in life is somebody who shall make us do what we can. This is the service of a friend.—Emerson.

**FORDS**

We have the largest stock on the Coast—20 machines at the present time to offer, all guaranteed, at \$275 to \$350 each. Easy terms.

**SOUTH TACOMA AUTO  
BROKERAGE CO.**

**POWER SAW BARGAINS**

Portable wood saw with 6 h.p. Waterloo Boy gasoline engine, or a King of the Woods Drag saw, 4 h.p., capable of 40 ricks per day, \$100 down and balance \$185 long time on either. Both are new. The factory price is \$350. Address

**AGRICULTURAL ENGINEERING CO.**  
Seattle, Wash.

**MOTOR TRUCK MANUFACTURING AT TACOMA.**

Through the insight of the directors of the Gerlinger Motor Car Co., which for the last five years have been busily engaged in selling motor trucks and pleasure cars in the Northwest, Tacoma now has a full fledged motor truck factory, where Gersix motor trucks are being made.

The motor industry has grown with such rapidity that it now occupies the position of the fourth greatest industry in the United States, and with the impetus which has been given it during the past year it is well on its way toward the top of the list of American industries. Business men who a few years ago scoffed at the idea of motor transportation are today buying their third and fourth trucks. Delivery men who formerly worried over the proposition of keeping enough feed for their hungry teams are now making money by means of the efficient light motor de-

livery rig. The demand is increasing day by day.

Many of the milk delivery firms in cities and cream and milk collectors in the country are now using motor trucks and for which purpose the Gersix is well adapted.

To the man who has never had an opportunity of studying closely the details of construction of a modern motor truck, a visit to the Gerlinger Factory will be one of much interest and education. Every part of the construction work is handled in units, the frame, the springs, front and rear axles, power plant, etc., follow each other in logical order. Then the testing and final finishing touches before delivery is made, all under the watchful eye of expert mechanics who are responsible for every job that is turned out.

The Gersix Truck has a number of new and attractive features from the standpoint of the buyer. First of all, a six cylinder motor is used, giving superior, flexible power with a

faster get-away, less liability of stalling in traffic and a big saving in the amount of low-gear work necessary. The worm gear type of final drive gives smooth positive and continuous power with a maximum of efficiency and a minimum of depreciation. Then the safety and comfort of the driver has been studied and electric starters and electric lights are used as standard equipment on all Gersix trucks. The vacuum feed for the gasoline is also part of the regular equipment.

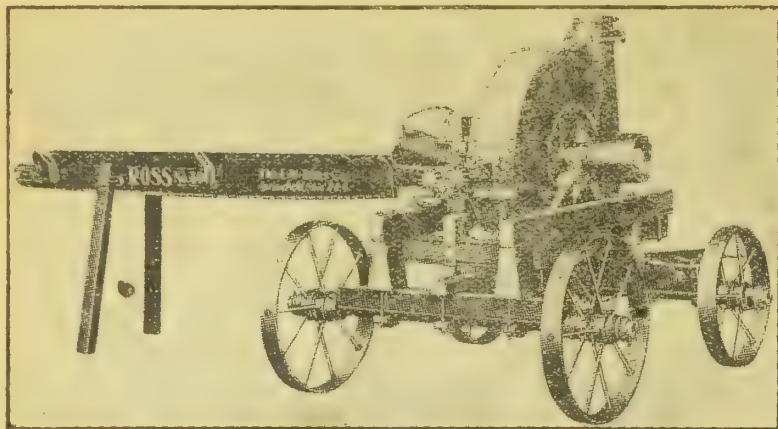
At the present time it is announced by the management that only one size of trucks are being built—a 2½-ton capacity which sells at \$2500 F. O. B. Tacoma. Other sizes are being developed rapidly and will be placed on the market soon.

The company includes several well known Tacoma men and is under the supervision of Mr. E. E. Gerlinger, president of the company.



## ROSS SILO FILLER

Is backed by  
SIXTY-FIVE YEARS' EXPERIENCE



The most substantial silo filler on the market. The blowing apparatus has five fans, which INSURE SUCCESSFUL WORK AT LOW SPEED and LIGHT POWER. It does the largest amount of work at lowest cost and is very durable.

Designed to meet the needs of the dairyman and farmer of the Northwest. Built for the purpose of filling silos and cutting feeds of all kinds. Write today for copy of our new catalogue.

We are state agents for the famous Anker-Holth Cream Separator—the leader of them all. Dairy, Creamery and Cheese factory supplies and barn equipment. Write for catalogue.

**Northwest Creamery Supply Co.**  
306 Second Avenue South Seattle, Wash.

## Fill Your Silo With The PAPEC Ensilage Cutter

Mr. C. H. Robinson, North Franklin, Conn., who operates a 16-in. 2-knife Papec cutter with an 8 H. P. gasoline engine, writes:

"In one case there were 22 men and 6 two-horse teams, and I was without corn about one-third of the time. Another case—had a harvester and two extra men and they could not keep me busy. Filled five average size silos in five days. Have had blower wheel running as low as 500 revolutions without a clog."

The fast-cutting and unusual elevating ability on little power makes the Papec economical and popular. That's why more Papecs are sold each year. There is a size for your needs.



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SEATTLE, WASH.

## EGGS EGGS EGGS

Ship your eggs to us also your cream and receive prompt cash returns.

## Miller Bros. Company

1532 Commerce St.

TACOMA, WASH.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

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Seattle, Wash.

Please Mention Horticulturist & Dairyman

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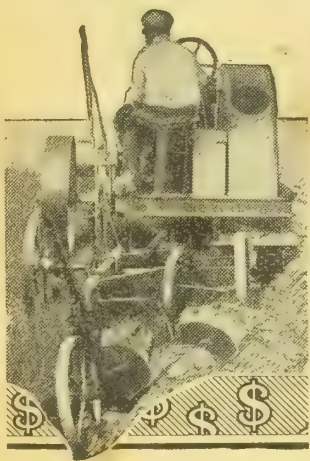
With Assets of

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Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail



## The BIG BULL Tractor

You see them everywhere. Last year WE told you what the Big Bull COULD DO. This year YOUR neighbors will tell you what the Big Bull HAS DONE for them, and is still doing. Ask us for their names.

**\$645.00** F. O. B.  
Minneapolis

Plows 8 to 9 acres in a ten-hour day. Self-steering in plowing. Subsoils furrow.

More Bull Tractors have been sold to farmers than all other makes combined.

The Big Bull will pull a 24-inch separator fully equipped.

20-H. P. on the belt. Will run a 7-in. centrifugal pump.

Write Dept. A-13 for the monthly Bull Tractor Bulletin.

**HUGHSON & MERTON, Inc.**  
329 Ankeny Street, Portland. San Francisco 823 Rail Road Ave. Los Angeles Spokane

## OREGON WALNUTS LEAD

Last season our grafted Vrooman Franquettes sold for the highest price that walnuts ever sold for on the Portland market, over \$450.00 per ton for the total crop, and we are already taking orders for the coming season at the same high prices. Our oldest orchard last year paid the highest income of any in the Northwest of its age.

To show our confidence in the walnut industry we planted 50 additional acres last winter that are now making a good growth.

Our nursery is in fine condition and promises a good growth. All of our scions were cut from our own orchard from tested stock, to insure that they are true to name. Order your trees early this season, for all of our trees were sold last year before the planting season begun. If you are interested in walnut growing, don't fail to see our orchard and nursery this summer. Write for our walnut booklet.

**GRONER & MCCLURE**  
Hillsboro, Oregon

## Leghorns

White  
Brown  
Buff

Also  
SILVER CAMPINES

Eggs for hatching stock and baby chicks. Our fowls are heavy layers. We practice Hogan system. Write for prices.

**MILLER BROS.**

Box 173,  
Fern Hill Sta., Tacoma, Wash.

The Walnut Book is a new, neatly printed publication in booklet form, published at Orenco, Oregon, at \$1 per year. It is devoted to the promotion of the walnut industry, both cultivation and marketing. We will send it to any new or old subscriber, together with one year's subscription credit for the Northwest Horticulturist and Dairyman on receipt of \$1. Address Box 1604, Tacoma, Wash.

## BABY CHICKS

**8c** from pure bred heavy laying White Leghorns. Satisfaction and safe arrival guaranteed. Hatching eggs, 15 for \$1.00; 100, \$5.00.

**THE QUIVIRA FARM,** Wash.

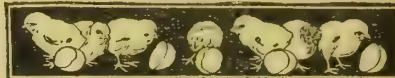
## White

Orpingtons  
Rocks  
Wyandottes  
Leghorns  
Pekin Ducks

**HOW ABOUT SOME NEW BLOOD** in the poultry yard. This month we are offering some fine, vigorous white Leghorn breeding cockerels of the famous Barron egg-laying strain, specially priced at \$3 each. Mention this publication in ordering. Write for Description and prices

**ROYAL WHITE FARM**  
Kirkland, Wash.

Box 101, B. F. D. 1, (Near Seattle)  
Mrs. C. M. Whitman, Prop.



To SAVE LITTLE CHICKS and help them to grow into big, strong, healthy birds, FEED

## Diamond Chick Food

Our name and trade mark on every original package.

Beware of Imitations

## POULTRY SUPPLIES

Our 1916 Catalog of "Diamond Quality" POULTRY SUPPLIES, listing everything necessary for the profitable production of poultry

Mailed Free

**Portland Seed Co.**  
Portland, Ore.

Ask for Catalog No. 52

## Cockere's EGGS

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Write for prices.

Single setting or lots.

**FRED A. JOHNSON,**

518 35th St.

Tacoma, Wash.

## WILD AND BRONZE TURKEYS

Reduced prices on all eggs.

**E. Y. SANDERS - Roy, Wash.**

**WYANDOTTES**—Beautiful, useful and profitable. Best for showing; best for egg-laying; best for table. Largest Wyandotte Farm in Southwest and only complete family of Wyandottes known. Eleven varieties and each from finest strain bred in United States. Write for full particulars.

**VILLA WYANDOTTE FARM,**

Villa Road,

Lamanda Park, Cal.



# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., JULY, 1916

No. 7

## LOWERING COST OF PRODUCTION.

F. Monroe, County Agriculturist, Montesano, Wash.

"Net profits lie between the cost of production and the selling price." Therefore if the profits from many of our farming operations are not what we would like there are two ways of increasing them; either by improving the market, which means could well be discussed separately, or by lowering the cost of production. The second way is without doubt the easiest way of increasing the net profits in the case of many of our farm products.

Take for example our dairy products and in this connection a word as to the average price for the state as compared with other states would not be amiss. For the year 1915 the average price of butterfat for Washington was 30.2 cents. Washington ranked twelfth in price received for this commodity. The average for the United States was 25.9 cents. The eleven that received more than Washington can be classed in two groups—those on the East Coast and those west of the Mississippi River. Those on the East Coast that excelled this state in price received for butterfat were Maine, New Hampshire, Vermont, Rhode Island, Connecticut, New York and New Jersey. The cities of New York, Boston and Philadelphia draw on all of these states for their whole milk supply, thus tending to keep the price of butter fat at a higher level. The other states where the price for butterfat was over the Washington price were New Mexico, Arizona and Nevada, the states where the limited production in proportion to population would naturally tend to keep the price of dairy products well up. Let us compare the 1915 Washington butterfat price with that of some other states. We find that for the product that we received 30.3, Oregon, our sister state, received 29.7 and Wisconsin received 28.2. While both of these states fell below Washington in price received, yet they are considerable above the average for the United States. Let anyone get the impression that the difference between prices in the different states is small, compare our 30.3 cents with the 19.9 cents that Tennessee received and the 19 cents received by Kentucky dairymen. As indicated in the beginning, there is a possibility of securing a higher price for our products, either by increasing the quality of the products or by improving on our present system of manufacturing and distribution, but better still, by both of these means.

However, it would appear that con-

sidering the present prices of dairy products in this state that the most logical way of increasing the net profits is to lessen the cost of production. Practically everyone recognizes the fact that some cows are more economical producers than

the winter, but too few are using silage. One dairyman with a grade herd told the writer that his herd consumed on an average of 8 lbs. of hay per day last winter, when they had silage, and 30 pounds when the silage was gone. Taking this saving

tions are at present that hay will be high again this winter, but will not likely reach the price of last year. One farmer this spring reported that he had sold \$300 worth of hay that he knew from previous year's experiences he would not have had if he hadn't put in a silo and filled it last summer.

The main reliance of the dairymen in summer is pasture, yet in many cases pasture could profitably be supplemented with green forage crops or soiling crops. The pasture itself can be greatly conserved by dividing it into two or three parts so that the grass that has been grazed over will have a chance to start up before the cows get on it again. These smaller pastures will also prevent the cows from covering so much ground in getting a day's feed, and thus save the energy for the more important work of milk production. Practically every pasture in this section is bound to become short in late July or August, depending on the season; thus it is impossible to keep cows up to their milk flow without some supplementary green feed. At this time vetch and clover sown about April 1st to 15th will furnish a succession of green crops or peas and oats could be used in the same way. A little later kale that had been transplanted about the middle of April could be used. During the month of September corn planted in May could be cut green and fed. Some such system could take care of the green feed supply during the most trying time of the summer season and add materially in keeping down the cost of production. It is not too early now to begin making plans for next summer's green feed crops.

## HOGS AND BEEF.

Hogs and beef are high enough in price. The profit question for the farmer depends on his cost of production. His locality and the crops he can grow are the factors. Money making from this source is largely a matter of observation and careful adaptation. There is no good reason why any farmer should make a mistake.

Large sums of money are being expended in states east to advertise loganberry juice and the demand for this product has increased at a phenomenal rate.

The Puyallup and Sumner Fruit Growers' Association could make very profitable use of a good size advertising fund to advertise their red raspberry shrubs and other fruit juices.



A system for the production of standard products of fixed quality and adherence to it is a sure way for satisfactory progress.

others. By selecting the cows in the herd much could be done in increasing the net profits. But without resorting to this method of improving much could be done by paying attention to the matter of feeding. Succulence in the winter ration and an abundance of green forage in the summer are without doubt of greatest importance in economical production. Silage and root crops are the cheapest sources of succulence in the winter, as well as being valuable for the food elements they contain. Either one alone adds much to an otherwise dry ration, but both together are far better than either. Practically every dairyman in this section uses root crops in

and assuming a herd of 15 cows fed four months with silage in the ration costing \$5 per ton and another herd of equal size fed four months with the silage replaced by hay at \$20 and we find a difference in this one item of feed for this herd would be \$200 for the four months. This \$200 would put up a silo of the capacity necessary to feed the 15 cows four months and leave a good profit besides.

With reference to the prices used in this calculation, it is doubtful if any silage in the county cost \$5 a ton last year, while \$20 a ton was about the lowest price paid for hay last winter, many paying over \$30 for very ordinary quality. Indica-



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman

C. A. TONNESON

Editor and Proprietor

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The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

## FRUIT MARKETING.

Fruit marketing under government supervision is being tried out this year. While the scheme may not serve to overcome all marketing difficulties, it is a step in the right direction. The help rendered is without cost to the fruit growers and Uncle Sam's servants do not usually retire after first attempt, regardless of results. Central control is essential for ultimate success, but the great commercial law of supply and demand is always a factor to be considered in the correct solution of the great market problem. In conjunction with the combined efforts of growers and shippers this year's work ought to be well concluded.

## A WATER CODE.

A state-wide water code conference was held in Tacoma July 10th for another attempt to harmonize the various interests concerned in irrigation and in water power plants. It is necessary that a basis for water titles should be created and defined in order to establish credit based on sound security. At the same time the people who have already invested money in irrigation and power plants are justly entitled to fair consideration in any measure proposed for enactment.

Sound security is the fundamental necessity for a low interest rate. There is no better security than irrigated lands in the hands of experienced, thrifty farmers. Since the water is actually of more value in the production of crops than the land it covers it is of utmost importance that water titles should be as firmly established as land titles in order to borrow money at a low rate of interest and to negotiate securities for development purposes.

As far as possible the State should retain control over its water power sites, yet not to hamper developments. Properly handled, the power sites should be made to pay a large portion of the state taxes and this could be accomplished under proper laws and regulations, without injustice to individual or combined monied interests. As population increases,

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

the power sites will have increased value, and as they can be made remunerative a proportional revenue from that source should be returned to the state. A committee of seven representing all interests in dispute will be appointed by President C. B. Lund of the state-wide water conference, and offer a new bill at the next meeting to be held at North Yakima, November 13th. Attorney Carroll B. Graves, of Seattle, is chairman of the executive committee.

## MILITARY SPIRIT.

A bill has been prepared providing for compulsory military training of 6 months for boys over 18 years. Evidently some of our so-called leaders are going wild on "preparedness." It looks as though the Grange will have need to express itself politically on true preparedness for peace as well as for defence. The military spirit, it appears, is brought into play too largely for political purposes at the present time.

## NURSERY INTERESTS.

The Medford meeting of the Pacific Coast Association of Nurserymen brought its members into close observation of the splendid work at the Southern Oregon Experiment Station by Prof. C. F. Reimer to overcome pear blight. This disease has been very costly to pear growers and has been a problem before scientists for years. The difficult feature was to overcome infection of the roots. This has been done after a world wide search for blight resistant stock. Pear stock of Chinese origin has been obtained for the roots on which other resistant stock is grafted and this is top worked with any of the commercial varieties desired for cultivation. By this method when blight appears in any of the top branches they can be removed without injury to the resistant main body of the tree. Several years experimenting has proven this plan to be practical. Prof. Reimer will endeavor to make a trip in search for commercial quantities of the blight resistant stock.

Nurserymen are preparing to co-operate with fruit growers, assisting in every possible way to standardize their products and to secure uniform action in marketing. Uniform laws in the different states to inspect, standardize and market will serve to overcome many of the present difficulties apparently and unnecessarily burdensome.

Continued efforts will be made for the production of the best quality of nursery stock, both in the fruit and ornamental classes. The increased interest in ornamental planting on the part of the public is meeting a hearty response on the part of nurserymen.

The 1917 meeting of this association is to be held at Tacoma. F. A. Higgins, Toppenish, was elected president, A. Brownell, Portland, Ore., Geo. C. Roeding, Fresno, Calif., and S. A. Miller, Milton, Ore., compose the executive committee; C. A. Tonnison, Tacoma, Wash., Secretary-Treasurer.

## THE WASHINGTON STATE GRANGE.

The 28th annual session of the Washington State Grange was held in Burlington, Wash., last month, and as usual attendance good with deep in-

terest to its membership. The Grange is a recognized power in this state because of its large membership, efficiency in its organization and for its efforts to better the condition of rural life morally, socially and politically.

The Grange was born of political necessity which means co-operative efforts on the part of farmers in measures affecting their interests without regard to partisan politics. During the past several years the Washington Grange has exerted great influence in the enactment of temperance laws, parcel post, dairy legislation, fire insurance and road laws. Some of the proposed improvements for which it will work the coming year are state publication of text books to be sold at cost; improved election code; rural credits for the benefit of the farmer and his community; good roads and a reform tax system. Favor and disfavor are expressed on various proposed measures, most of them sound in principle, but all serving for the needed purpose of education. The membership of the Grange is increasing in knowledge year by year because of the educational propaganda carried on through the machinery of its organization. Farmers are learning through the various Grange meetings how to work together. Their divergent views are becoming harmonized, personal preference and feeling and many unconscious selfish traits are being subdued for the common good of the community. This is all tending to a better security and a broader basis for credit. It will eventually lead to some influence and power in the making of prices on commodities the farmer must sell and at the same time afford an avenue to buy at low or discount prices. In many communities members of the Grange might for their own benefit become more active to standardize and perfect the quality of the leading products offered for sale. For instance, at Kent, Spanaway and other communities that might be mentioned adherence to a system of egg production prevails that appeals to buyers of very large quantities and participating poultrymen are getting very satisfactory prices. At the present time the production of butter in the State of Washington is about equal to the local demand. Unless preparations are made for export to outside markets by another year, prices will drop. In the preparation for distant shipments it is very necessary that the average quality of the butter produced in this state shall be raised several points and that in quality it is made more uniform. Members of the Grange can do much to bring this about through the local community gatherings, and it is one of many needed activities sure of reward.

## DAIRYMEN AT CHIMACUM.

Mr. Chas. Eldridge, of Chimacum, recently lost his young world's milk record cow, Margie Juanita, a serious blow, but, undaunted, Mr. Eldridge is too good a dairyman to be ruffled by any accident of this kind. Some youngsters of same breeding in his herd will perhaps outdo her high record.

Mr. Thomas Yarr is getting some high record Holsteins ready for the market and perhaps take part at the Portland sale.

Mr. Hugh Nesbit has distributed

some fine young cows among dairy men of the Northwest the past year at very attractive prices. Another lot of youngsters is being prepared for buyers this fall.

Wm. Bishop writes: We have made another world's milk record, which makes the third one in less than a many months.

The young heifer, Violet Blossom Artis Cornucopia, calved at the age of 3 years 6 days and is a very small for her age. She was put in test and at the end of her 30 days has to her credit 3025.3 lbs. milk, which is the world's record for her age. Her best 7 day's milk was 753.6 lbs. and butter 24.65 lbs.

She was not forced to any extent as we have her in the yearly test and she will no doubt make a large yearly record. Her best day's milk is 115.7 lbs.

She has a dam in the yearly test which gave 108 lbs. milk in 1 day that is a sister to the world's champion milk cow, Lutscke Vale Cornucopia, 31,243.4 lbs. milk in one year.

The sire of Violet Blossom Artis Cornucopia is Violet Blossom Sir Fayne, a son of Sir Johanna Ruth Fayne, and Violet Blossom, with a yearly record of over 22,000.0 lbs. milk and 925 lbs. butter.

The Glendale Creamery Company, D. S. Troy, manager, is giving careful attention to breeding and feeding. Individual records kept show over 778 pounds butter in a year by Chiqueena, and another cow will go over 800 pounds. Those which fall below a certain standard are weeded out and instead of continuing the testing separately, this firm is helping to create a cow testing association for the benefit of other dairymen in the community.

## PUREBRED SIRES PAID.

A herd of 80 cows with an average production of 427.18 lbs. butterfat is the remarkable record hung up by John Hanson's herd of grade Jerseys in the Ferndale Cow Testing Association's tests for the year of 1915.

That Mr. Hanson is a progressive breeder and a firm believer in purebred sires is evidenced by the fact that purebred Jersey bulls have been used continuously for thirty years at the home of this record herd in Modesto, Calif.

## IRRIGATING CORN.

The ground must be cultivated enough times to keep the weeds entirely out and prevent the soil from baking around the roots of the corn. This surface mulch will save the use of too much water before the tassels begin to form. The less water and the more cultivation until the tassels start, the better.

Any attempt to supply the corn with water by surface irrigation instead of conserving the moisture already in the ground by cultivation will prove fatal to your corn crop. Repeated pouring of water from the surface and allowing it to evaporate because of a lack of mulch on the surface will take the soil, a condition to which corn roots are extremely sensitive. This is generally the cause of corn turning yellow.

The corn should be given only enough water to keep the leaves from curling until the tassels appear.



From then until the ears are formed the moisture should be kept within an inch or two of the surface of the ground. Letting the corn suffer slightly for water when pollen is forming will mean a very slight yield of ears.—Lee M. Lampson, County Agriculturist for Benton County.

#### PIG CLUB WORK.

Last year, according to U. S. Dept. of Agriculture, 11,632 members were enrolled in the pig clubs. Not all were active members, but most of them raised pigs. While a great many reported more or less completely on their work, 1,608 members from 11 States, with a membership of 11,032, reported completely on weights, values, gains in weight, costs of gains, and profits.

The figures following are compiled from the complete reports. Seventeen hundred and eighty-three pigs were reported, or an average of 1.1 pigs per member. The majority of members took weanling pigs to feed in the spring and reported their results in the fall. The average weight per pig at the beginning of the feeding period was 39.2 pounds. At the end of the feeding period, which averaged 166½ days, the pigs weighed 194½ pounds. This was an average daily gain in weight of 0.93 pound, at a cost of \$0.044 per pound. This low cost of gain can be attributed, it is believed, to the better feeding methods practiced and the wide use of forage crops by the members.

The original value of the pigs averaged \$5.24. The average final value was \$21.43, a gain in value of \$16.19. This gain in value cost \$6.91, giving an average net profit per pig of \$9.37 and an average net profit per member of \$10.29.

These figures are a strong indication that improved swine, raised in the right way, are profitable even when pork values are as low as they were in 1915. The vast majority of members had carefully selected high-grade and pure-bred hogs, and to this improved blood, as well as the better feeding methods, can be attributed the large difference in favor of the average final value of pig-club hogs in the fall—\$21.43, as compared with the estimated average value of all hogs on farms in the United States on January 1, 1916, \$8.40. The pig-club members have shown their ability as a body to raise pigs successfully. They have raised good pigs, cheap pigs and profitable pigs.

#### SWINE IN IRRIGATED DISTRICTS.

Because of the relative ease with which irrigation farmers can get started in it, the swine industry specially commends itself. To start in this business requires comparatively little capital, and the increase in the swine population is rapid. Moreover, hogs furnish one of the best means whereby the forage and grain crops produced on the projects can be marketed at a profit. During a part of the year 1915, however, the industry experienced a depression throughout the country. Prices for pork were low and prices for grain were relatively high. Nevertheless, the swine industry made marked development on several of the projects. It is gratifying to note that the better farmers appreciate that it is best to engage in the swine industry conservatively. They understand that

it is desirable to improve the quality of the breeding and the management and to increase their productive efficiency, so that in times of high prices good profits can be secured and in times of low prices serious losses can be avoided.

Despite the low prices of 1915, the receipts from the swine industry were larger than ever before on some of the projects, and the swine population increased markedly.

The swine growers are gradually improving their methods of utilizing certain field crops produced under irrigation. Appreciation of the value of alfalfa pasture, when properly supplemented by carbonaceous feeds, is rapidly increasing. Determinations made on practical farms by representatives of this office during the year showed, despite low prices for pork, some farmers secured returns as high as \$40 per acre from alfalfa fields used as hog pasture. Good results were also secured by hogging field peas, several instances having been noted in which the returns per acre approximated \$40. Equally good returns were secured in a number of instances where corn was hogged off. This method of utilizing alfalfa, peas, and corn as hog feed commends itself to the swine growers on the projects, particularly because the hogs, harvesting the crop themselves, require a minimum of labor at a time of year when labor is most needed on the farms. There is still much room for improvement in the feeding methods practiced, but good progress is being made in this connection.

The results secured in 1915 in connection with cholera control were very encouraging in most instances.

#### TO IRRIGATE PROPERLY.

The aim should be to maintain a favorable moisture content throughout the main part of the growing season while still permitting the soil to dry out sufficiently to mature the crop. Irrigation should be applied when the soil moisture content drops to near the wilting point and in just sufficient amount to raise the moisture content to the maximum usable water capacity of the soil throughout the root zone. Proper irrigation supplies a favorable moisture condition and encourages the growth of feeding roots, bacterial activity and the liberation of plant food. Improper irrigation checks these processes and often causes unfavorable soil temperature and drainage problems, or the leaching of plant food. In strictly arid districts it may even result in failure. Irrigation should be regarded as simply supplementary rainfall and is desirable whenever rain is desirable. Proper irrigation is a good means of soil moisture control.

Farming under irrigation reaches its highest development with intensive farming. Where large crops are removed and large amount of refuse must be used to keep up the usable water capacity and maintain fertility, irrigation makes possible a greater diversity of production. It means crop surety, closer neighbors, more shade, water for live stock and generally less dust. It compels closer co-operation.—W. L. Powers, O. A. C.

#### DAMPING OFF CONTROL.

The damping off difficulty of young plants and seedlings is controlled by an application of sulphuric acid ap-



## JAMES McNEELY

### REPUBLICAN CANDIDATE FOR GOVERNOR

PRIMARIES SEPT. 12, 1916

#### JAMES McNEELY

Should be elected Governor of the State of Washington.

He is a self-made man.

He is financially able to conduct his own campaign, thus assuring the people of this State an administration absolutely free from the control of special interests.

Those who have the pleasure of Mr. McNeely's acquaintance vouch for his honor, loyalty and Americanism.

He stands squarely on the platform of the Republican Party, adopted at Chicago in June, 1916, and pledges unfailing efforts in the promulgation of those principles.

The number of employees of the state has increased about 400% in ten years; the expenses for strictly state purposes have increased over 300% in ten years. The population during the same ten-year period has increased less than 50%.

How long would a private business remain solvent under like conditions?

The most vital item in our state that affects the laborer, farmer, merchant, professional man, banker or manufacturer, is business, and the largest business in the State of Washington is the State Government.

The State requires the same capable business executive direction that any great business demands. This State needs a constructive man as Governor, one who builds up business instead of tearing down.

Why can't we have a business man for Governor?

Pierce County presents to the voters of the State such a man, in the person of JAMES McNEELY, candidate for Governor on the Republican ticket.

If you believe in honoring a man who by his ability, integrity and honest dealings, has risen from the ranks of labor to a broad-minded, fearless, capable and valuable citizen, VOTE FOR HIM.

If you want a man with energy and executive ability, who is broad enough and big enough to conduct the affairs of this State on clean-cut business lines,

**VOTE FOR JAMES McNEELY  
LET'S MAKE THIS STATE**

As Good,

As Great,

As Dignified,

As Patriotic,

as was Washington, for whom it was named.

**JAMES McNEELY**

Candidate for Governor



plied to the seed beds in a solution of water at the rate of from one-eighth to three-eighths fluid ounces of acid per square foot, just after the seed is sown and covered. The acid is dissolved in form  $1\frac{1}{2}$  to 2 pints of water.

Copper sulphate and zinc chloride are good substitutes, successful when used. Sulphate one-eighth to five-sixteenths ounces per square foot, and zinc chloride one-fourth to five-eighths ounces per square foot, dissolved as for sulphuric acid. Sterilizing with hot water is also effective but in many instances would be too expensive.

The 1916 crop of grass and other forage crops will be at an increased yield per acre according to the thorough preparation of the ground and the kind of seeding which is being done on many farms.

#### AMONG PIERCE COUNTY, WASHINGTON, FARMERS.

By C. C. Cushman.

The Murray Bros., of Wauna, own a most valuable 160-acre ranch in the Henderson Bay section, of which the greater part is rich bottom land. They are now building a new dairy barn 40 x 110 feet, modern in all departments. Their herd of high grade, good size Ayrshire cows is the only herd of this breed in that section. These cows are large producers of milk rich in butterfat, and good rustlers. This breed has been bred in the United States for 100 years. At the Buffalo (N. Y.) Pan-American Exposition, in 1901, the Canadian Ayrshire stock carried home many blue ribbons. This stirred up our American Ayrshire breeders, and today we are producing a better type with greater milk production.

This breed originated in the small county of Ayr, Scotland, a somewhat rough country bordering the sea on the west coast. This county consists of Carrick, Kyle and Cunningham districts. There is an old Scotch saying, "Carrick for man, Kyle for a coo, and Cunningham for butter and cheese." Robert Burns, the "Plowman Poet," was born here. He described a heifer, presented to him by a friend, as "the finest (quey) cow in the country."

The five-year-old pure-bred sire at the head of the Murray Bros. herd was bought as a yearling from J. W. Clise, proprietor of the noted Willowmoor Ayrshire herd, at Redmond, Wash. This animal is a noble specimen, weighing about 1600 pounds.

Murray Bros. plan to put up a silo 12 x 24 feet. They are devoting their whole time to clearing and improving their splendid property, and will test each cow of their herd for butterfat production. They ship their cream to Seattle.

#### Cooked Ferns for Hogs.

Mrs. A. E. Baker, of Glen Gove, feeds pigs with boiled ferns and shorts. She cuts the common large wild fern into short pieces, put into a kettle in water enough to cook the fern well. After cooking the ferns, she mixes in shorts. Pigs like it and thrive on the food.

#### Samuelson's Fruit Farm.

F. W. Samuelson, of Cromwell, has just finished picking a fair crop from his three acres of Nick Ohmer and Marshall strawberries. His first berries sold for \$3 a crate, and last ones at 50 cents. He says the Nick

Ohmer is very productive, hardy and with him best general purpose berry.

Several years ago the local fruit association, then in existence, shipped 600 crates of these varieties to Winnipeg. They were delayed eight days in the mountains on account of washouts, and were eleven days on the road. At destination it was found that the Marshalls were decayed and worthless, but the Nick Ohmers stood up well and were in splendid condition, and brought \$4 a crate. In planting they were set in blocks of 20 rows, alternately.

Mr. Samuelson has 1000 fruit trees, of which 800 are apple and balance are general orchard species and varieties. Crop is light this year. Last year he sold several hundred boxes of apples in Tacoma, and after deducting expenses the net profit was small for need of bigger markets. His trees are over 20 years old. One tree, a Gano, bore 15 boxes of good apples at six years of age. The hydraulic ram method is used in irrigating. Several tanks are used in distributing the water. Mr. Samuelson has resided here many years, and has a splendid property. He has raised a good family and is one of the most respected residents.

#### At Cromwell

E. M. Muri has two acres of irrigated alfalfa, from which he will cut eight tons of hay. He says it pays to irrigate properly. Water is carried 1500 feet, gravity, through three one-inch pipes. The wood tank located on the hill back of the residence has a capacity of 5000 gallons. Water is applied by the springling method. This is a good system for small tracts. The trees and crops of all sorts on this place are exceedingly thrifty.

Several other farmers along this waterfront are also growing alfalfa in a small way with splendid results.

Generally speaking, crops of domestic fruit in the Gig Harbor and Henderson Bay regions will be far below normal. In some orchards the apple crop will be large, while in some other locality there will be scarcely any. The same conditions prevail with reference to all other kinds of fruit-bearing trees. The strawberry crop was good. There will be a large crop of all sorts of wild berries.

O. M. Clay, of Arletta, is a successful breeder of Single Comb White Wyckoff and Brown Leghorn chickens. Last year he made a specialty of pullets which he sold to growers throughout the Northwest. This year he is keeping them for eggs. He now has 500 laying hens. Mr. Clay is now building a new 60 x 14 foot laying hen house with a capacity of 1000 laying hens.

Mr. Pearson, of Arletta, grows alfalfa, vegetables and fruit. His apple trees are loaded with fruit. His greenhouse produces cucumbers for market. He has a gravity system for irrigating, and is doing well.

#### At Rosedale.

Mr. Byron Walrath has a five-year-old Jersey cow which gives 56 lbs. milk a day, yielding about  $2\frac{1}{2}$  lbs. butterfat.

Here is a good hydraulic water system by means of ram—2-inch intake and 1-inch discharge pipes. The intake is 100 feet from and twelve feet above the ram. Whirling sprinklers set about 30 feet apart do splendid irrigation service.

#### At Artondale.

Mr. and Mrs. Geo. S. Ford have an

orchard of 28 acres comprising 2000 apple and 2000 Italian prune trees. This is the largest orchard in this community. Of Grimes Golden there are 800 trees; the balance, principally, are Jonathan and Gravenstein. This includes a family orchard of leading varieties. The trees are about 20 years old. They consider the Gravenstein the best and most profitable of all. The apple crop this year will be much less than normal. Prunes will be an average crop. All trees are cultivated, pruned and sprayed. The apple trees are sprayed in the spring with lime and sulphur for scab and later again sprayed with arsenate of lead for codlin moth. Prune trees are sprayed in the spring with lime-sulphur and later again with this solution diluted, for fungus diseases. Mr. Ford "knows how" and is building up a great fruit orchard. A pumping plant forces water into a tank 15 rods distant and 30 feet higher than the gasoline engine. This gives water for the trees and premises about the house and also for the chicken yards and for domestic

purposes. The dryer has a capacity of 6000 pounds of fruit at a time. It requires from 24 to 36 hours to dry the prune.

In conjunction with fruit growing they have 600 Brown Leghorn chickens. Hawks are a great menace to the industry in this timbered country. Many are caught in traps set on top of old tree stubs. The shotgun is the best protector. Mrs. Ford prefers Brown chickens to White, as they can better hide in the brush and ferns.

The question of marketing satisfactorily is a serious problem, as the local markets are frequently overstocked, and at times apparently discriminate against local products. The remedy of course is organization, first on the part of the growers themselves to standardize their products and to assemble sufficient volume to be attractive to other markets. The growers here are seeking the help of the merchants and commercial bodies in Tacoma and Seattle for the development of larger markets.

### Announcement of Enoch A. Bryan of his candidacy for the nomination for the U. S. Senate subject to the Republican Primaries

Encouraged by long years of service to the state in another capacity, I offer myself as a Republican candidate for the nomination for the Senatorship. My close study of the economic and industrial conditions of the state for nearly a quarter of a century should, in a measure, qualify me for the discharge of the duties of that high office.

In case of election, the following subjects will receive attention:

The preserving of a just balance among the industries is essential to

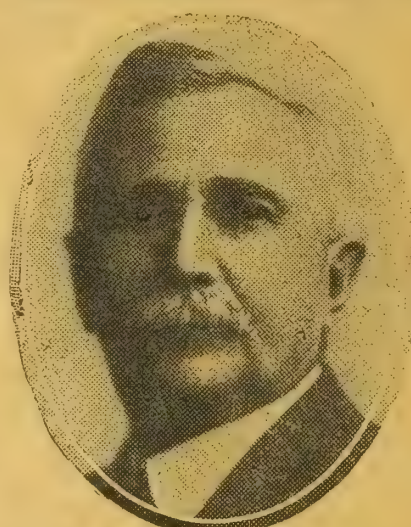
territorial aggrandizement, possesses the basis for a career of peace, yet it must be confessed that it is in no condition to fulfill its obligation to its own people and the world in case of war. We should establish adequate coast defenses, an adequate army and navy and prepare a citizen soldiery commensurate with our own responsibilities and our peaceful policy. This is not only possible, but it is a duty and may be done without the slightest taint of militarism.

The decrease of our rural population and the mad rush to the city constitutes a national menace. The remedy lies in the possibility of a just and well distributed economic betterment of the rural classes. This may be brought about not only by the extension of agricultural knowledge, but also by a sound solution of the problems of marketing, rural credits, inland transportation, highways and oceanic transportation.

There is great danger lest in hasty and ill-considered legislation relative to the disposition of the remnant of the public domain, our people may be subjected to a burden of national taxation to which our fellow citizens elsewhere are not subjected, and our mining and other industries may suffer irreparable damage. Protection against such injuries will be an important duty of our Congressmen.

Should the Republican party nominate me and the people of the state elect me to the United States Senate, I shall give to the task allotted, the same devotion which I have given to the service of the state during the last twenty-three years.

ENOCH A. BRYAN.



the national welfare and has been a cardinal principle of the Republican party. This requires a just balance between capital and labor, sound financial organization calculated to serve all classes and regions, and the application of the principles of protection to the national development. All classes—wage earners, farmers and manufacturers—should be benefited by a properly constructed and balanced tariff system.

A merchant marine is a vital necessity alike for peace and the possibility of war. Our oceanic commerce requires every possible encouragement and help. Every great nation must be prepared at all times to protect its territorial integrity, the lives and property of its citizens and its honor. While the United States, in its location and circumstances and its freedom from a desire for terri-

A number of our readers are in the market for Shropshire sheep. Those who have sheep and goats to offer will do well to make the fact known.

#### FARMING THE FARMERS.

There are too many schemers and organizations which are living off of the farmers without rendering a due



equivalent for their extractions. These flourish best where the farmers do not work together concertedly. Unity of action on the part of the farmers in any community for one or more specific purposes will serve to save many a hard earned dollar because the farmers can thus keep posted to better advantage on what and how to buy, when and where to sell. Forget minor differences and get in touch with your fellow farmer. Plan your line of production, standardize the crops so far as possible, and keep control until a fair price is received, constitutes a policy when worked out concertedly in the community that will go a long way to prevent the individual farmer to part unnecessarily with some of his earnings. This kind of protection to prevent farmers from being farmed depends on their willingness to get together.

### STRAWBERRY WEEVIL.

No effective remedy has yet been found to combat the strawberry weevil, which spends most of its life under ground. When a plant is affected the leaves will be light yellow, showing an unhealthy appearance. The only practical way suggested by Dr. A. L. Melander, of the State College, is to take up and destroy infected plants and when a patch is badly infected the ground should be rotated with other crops which require frequent plowing, then reset strawberry plants after a couple of years.

### SEALING THE SILO.

It will be noticed, following a day's filling, that the surface of the silage has become very hot. This heat is mostly in the surface foot in contact with the air. If filling is continued the action will be stopped, but if a day or so intervenes before filling is started again this surface will probably be spoiled and should be thrown off, according to the advice of J. B. Fitch, of the Kansas Experiment Station. When this surface is allowed to stand for some time it will spoil to a depth of from six to eight inches. Underneath this rotted layer the silage will be good. This covering acts as a natural seal for the silage. The depth to which silage will spoil on top depends upon the amount of tramping it has received and upon the moisture in the silage. When the silo is full, as much as twenty barrels of water should be added and the silage then thoroughly tramped. For a day or so following this it is a good plan to tramp the silage each day, especially around the wall of the silo. After this the silage will not settle much, and it is best not to break through the seal by walking on it. When this method is employed, six to eight inches of spoiled silage will probably be lost. In many cases, however, the silage spoils to a greater depth because of rapid settling and poor tramping.

Straw may be run through the cutter and spread over the surface of the silage, and when thoroughly wet and well tramped will make a good seal. After the top of the silage has been thoroughly wet down and well tramped, a layer of oats on this will sprout rapidly because of the heat underneath, and will form a layer over the surface of the silage. A thin layer of salt sprinkled over the top of the silage after it is wet down and well tramped will cut down the

amount of spoiled silage. Another method used is to cover the top of the silage with tar paper.

### WHEAT AND OAT SILAGE.

According to A. J. Lashbrook, Dairy Field Agent, State College of Washington, wheat and oat silage is the proper thing for certain districts in Washington. In Whitman county, Spokane county and the north half district of Okanogan county, where the altitude is high, nights cold and conditions generally rather unfavorable to the growing of corn for silage, considerable effort has been given to wheat and grain crops for the silo. In Whitman county corn only yields from three to five tons per acre and seldom exceeds seven tons, whereas wheat or a good stand of peas and oats will yield from 10 to 15 tons of silage per acre.

Feeding experiments by dairymen and by the Experiment Station at the college indicate that for feeding dairy cows small grain silage is practically as satisfactory as corn silage.

Success with grain silage, especially wheat, which is so abundant and yields so heavily in these sections, will mean a great deal to the dairymen and stockmen, who by securing heavier yields and equally good results will reduce the cost of producing silage considerably. Six dairymen of the Whitman County Association have planted an acreage of about 110 acres of wheat or peas and oats for the silo this year.

Tests by dairymen show that fields of wheat and peas and oats secured yields twice as large as ever gotten with corn silage and the results in feeding were every bit as good. Consequently it seems the logical thing to put wheat or peas and oats into your silo where the yield of corn is so small and the yield of grain crops so large.

### WHEN TO CUT HAY.

According to Professor E. G. Shafer, of the State Agricultural Experiment Station at Pullman, the hay crop should be cut when the greatest total amount of digestible nutrients can be obtained. This condition will be attained somewhat earlier in the biennial and perennial legumes than in the grasses.

Alfalfa makes the best quality of hay if it is cut just as it is coming into bloom, say when it is one-fourth in blossom. It will be more digestible if cut at this period and there will be less loss in leaves than if cut later. If cut earlier there will be a reduction in yield. Red clover should be cut at a little later stage of maturity or just when the first heads are turning brown.

Sweet clover should be cut just before the blossoms appear. When cut at this stage it will retain less of the bitter taste and will be less coarse and woody than if cut later.

Timothy, orchard grass and other grasses should be cut after they are in bloom and when the seed is being formed. There is less loss in the grasses by the falling off of leaves as the plant advances in maturity than in the clovers. If timothy is cut too early it is more difficult to cure.

### CORN CULTIVATION.

From now until corn is ripe the most important operation is cultiva-



## Bumper Grain Crops

Good Markets — High Prices

Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa. No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer. In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. There is no war tax on land and no conscription.

Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

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### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.

## CORN

Harvester cuts and throws in pile on harvester or windrows. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only \$22.00 with fodder binder. Testimonials and catalogue FREE, showing picture of Harvester.

PROCESS MFG. CO. Salina, Kansas

tion. You should cultivate to accomplish two things.

1. Keep the corn clean from weeds. Even a few weeds will rob the corn of much plant food and moisture and reduce the yield.

2. Keep the surface loose and mellow in order to hold the moisture and permit the air to enter the soil more readily.

If soil becomes crusted after a rain it should be cultivated. Cultivation should be shallow and the surface of the soil should be kept level. Long, sharp-pointed cultivator teeth cut off many corn roots and injure the crop. The deepest cultivation should be given while the corn is small (4-10 inches high) but should not be over three or four inches deep, the later cultivations not being over two or three inches deep. Leave as few tracks as possible to lessen evaporation. It is not usually wise to cultivate with a horse after the corn begins to tassle because of the danger of breaking the brace roots which come out near or above the surface and of knocking down the corn.—George Severance, State College of Washington.

W

WHY A WEYERHAUSER

Because neither your money nor ours could buy a simpler or more efficient silo than

THE Weyerhaeuser SILO

Its air-tight construction is permanent because the staves and air-dried clear Douglas Fir are of the best quality. The air-tight doors balance perfectly and swing easily and do not stick. The anchorage system is tested and guaranteed. The roof is self-adjusting. Write for booklet and name of our nearest agent.

WEYERHAEUSER LUMBER COMPANY  
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W

WANTED—To hear from owner of good ranch for sale. State cash price and description.

D. F. BUSH, Minneapolis, Minn.

FARM PROPERTIES—Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. DANIEL MCGREGOR, Berlin Bldg. Tacoma, Wash. Established over 30 years.



**SILOS INCREASING.**

The silo becomes more important each year as a means of utilizing the corn crop, says the Rural New Yorker, and gives these figures for it: Five years ago only 3½ per cent of the total crop went into the silo, and 11 per cent in addition was cut and fed green. In many of the States less than half the corn is left to mature grain. See what the silo has accomplished in the following named States:

|                   | Percentage of Crop Cut | Cut for Silo. | Green Feed. |
|-------------------|------------------------|---------------|-------------|
| Maine .....       | 35                     | 15            |             |
| New Hampshire..   | 65                     | 6             |             |
| Vermont .....     | 74                     | 5             |             |
| Massachusetts ... | 58                     | 10            |             |
| Connecticut ..... | 55                     | 3             |             |
| Ne York .....     | 49                     | 9             |             |
| Wisconsin .....   | 36                     | 18            |             |
| Michigan .....    | 28                     | 19            |             |

Last year the corn grown on 8,364,000 acres was put into silos. This year there is probably a gain of 1,000,000 acres. We see that through New England and New York less than half the corn is matured for grain. Even in States like Illinois and Indiana about one-fourth of the green crop is fed green or put into the silo. There is only one way to look at these figures. They show that the silo is gaining in popularity, as year after year the great value of silage is demonstrated. Where corn brings the highest price there the largest proportion of the crop goes into the silo. As the cultivation of alfalfa spreads through the East there will be more silos. Alfalfa fits the lands for more corn, and good silage and alfalfa hay are pretty close to a full balanced ration.

**OREGON RURAL CREDIT PLAN.**

A reduction of one-third of the present interest rates in farm loans would be secured by the proposed rural credits measure, the initiative petition for which is now ready for circulation.

Other features in its favor, as enumerated by C. E. Spence, Master of the Oregon State Grange, in a communication to the Oregon Grange Bulletin, are as follows:

It harmonizes with the proposed federal legislation for rural credits, which it would supplement.

It is self-operating, requiring no additional administrative expense, going into the hands of the State Land Board, consisting of the Governor, Secretary of State and State Treasurer, which has handled successfully the state school funds of \$6,000,000.

It adds nothing to the taxpayer's burden, since all operating costs are to be borne by the borrower.

Bonds for obtaining the loan funds can be marketed at lower rates than farm mortgages, while at the same time the state merely "goes security," for which it is amply protected by mortgages on land at double the value of the loan.

**CONE TRAP FOR FLIES.**

A fly trap is far more effective than fly paper, poison or fly killer for reducing the annual crop of house flies, according to specialists of the Bureau of Entomology in the U. S. Department of Agriculture. Many types have been advocated to apply to windows, garbage cans, and man-

ure boxes. Exhaustive tests on the part of the Department's specialists, however, have shown the cylindrical cone type will catch more flies than any other type yet devised. In a new Farmers' Bulletin, No. 734, by F. C. Bishopp, means of making this and various other types of traps and other methods of destroying flies are described. The bulletin describes how to make a trap of the cone type with only four second-hand barrel hoops, a barrel head, a few strips of lumber and 45 cents worth of screening and tacks.

The two barrel hoops are bent into a circle and nailed together, the ends being trimmed to give a close fit. These forms the bottom of the frame and the other two hoops, nailed together in a similar way, the top. The top of the trap is fitted with an ordinary barrel head, with the beveled edge sawed off, causing the head to fit closely in the hoops to which it is securely nailed. A square is cut out of the center of the top the top form a door, and the portions of the top are held together by inch strips. The door consists of a narrow frame covered with screening well fitted into the trap and held in place by buttons. When nailed together the trap is cylindrical in shape and the frame is covered with closely tacked screen wire on the outside of the hoops. Four laths (or light strips) are nailed to the hoops on the outside of the trap to act as supports between the hoops, and the ends are allowed to project one inch at the bottom to form legs. A cone is cut from the screen and sewed with fine wire or soldered where the edges meet. The top of the cone is then cut off to give an opening an inch in diameter. This is then inserted in the bottom of the trap and closely tacked to the hoop around the base.

Care is necessary in choosing a location for the trap if it is to attract the greatest number of flies. Traps may be baited with stale beer, milk or molasses and water contained in a shallow bucket cover placed beneath the trap. The trap should be located where flies naturally congregate. Fresh bait should be put in frequently and the caught flies killed and emptied out. The destruction of the flies is best accomplished by immersing the trap in hot water.

The Yelm Project will be watched with much interest by farmers in this part of the State. Those in doubt will soon be convinced that a sandy, gravelly prairie soil, watered, will produce the bumper crops and with the silo method of preserving every part of that which is grown, dairymen will find a smooth road to success.

**THE ELECTRIC BLASTING MACHINE FOR FIRING STUMP CHARGES.**

J. R. Mattern.

The time honored cap and fuse method of setting off the charges of powder in removing stumps is the only one known to a great many people, yet there is a better way of doing it—a way that gets the stumps out with less powder, leaves a smaller hole in the ground and is safer.

This is to detonate (or fire, as it usually is said) the charges with an

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We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation.

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A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

**SPECIALTIES**

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.



No Gumming  
Or Scoring

Standard Oil Company  
(California)

**MICA AXLE GREASE**

electric blasting machine. Such a machine is just a small affair, say ten inches high and six or eight inches square, and it consists mainly of a little machine something like a magneto on a gasoline engine or an automobile, operated by a handle you pull up and push down. There are many of them on the market. They may be bought from almost any big hardware store.

The one big thing about the electric blasting machine is that with it you can fire several charges instantaneously. This is of great advantage in every case where the thing you want to blast extends more than twelve or fifteen inches in any direction from the charge. In removing big stumps with one charge placed deep under the center, there is a big waste of powder, and of force, in moving all the earth that is loosened and thrown out. The ideal way is to put a smaller amount of force—just enough to lift the root out—under each of the main roots, at about the point where it joins the stump body, or even farther out, where it is anchored tightest by the

**FORDS**

We have the largest stock on the Coast—20 machines at the present time to offer, all guaranteed, at \$275 to \$350 each. Easy terms.

SOUTH TACOMA AUTO  
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**AUCTIONEER**

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

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Good wages can be made trapping them. We are the only fur firm in the world offering a market for these skins. Write for special prices.

WE WANT 100,000 SKINS AT ONCE

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Chicago, Ill.



ground. This will require several charges, say three or four. If they are detonated all at the same time, the result will be to lift the stump right out of the ground without tearing up the earth much, and most of the loosened dirt will fall back into the small cavities. If there is a tap-root, or a root extending straight down into the ground under the body of the stump, you should place one charge right against it, or two charges, one on each side, if it is very big, and it will break off instead of pulling when blasted. Be sure to place the charges at a sufficient depth so that the remaining root will be below the plow line.

If you think the stump will not be split up enough for easy handling and burning by these small charges, place another one right under the center, against the wood. It will not require much powder in a charge so placed to break up almost any stump.

### FARM COST ACCOUNTS AND ESTIMATES.

One of the most vital questions in production and manufacturing is costs. Price ultimately depends on cost; success or failure depends as much on costs as on selling price; the farming business is no exception to this rule. The elements of cost for all enterprises are fundamentally the same: cost of material; cost of labor; use of capital in rent or interest; the compensation for risk; compensation for enterprise; compensation for civic service, or taxes. For practical accounting purposes, cost is divided into direct material, direct labor, and indirect expense.

Cost accounting on the farm is difficult on account of the great variety of elements influencing the farming business, and a large part of it is based on estimates. The requirements for keeping cost accounts are an inventory at the beginning and end of the year; an account of all money paid out and received; and a record of all work done by men and horses. In addition, it will be necessary to charge interest and depreciation. No profound knowledge of accounting is necessary; but a faithful application of common sense and a daily record of events. The value of habit can not be overestimated. However, it is essential that the cost accountant understand the economics of the business in which he is engaged.

The value of cost accounts is shown quite vividly by the increased production of dairy herds in cow testing associations. Over \$10,000,000 a year has been added to the value of dairy products in Iowa alone by the cow testing associations. Prof. Dryden, who developed the 1000 egg hen, ascribes his success to records. The same principles are true for other farm enterprises.

There are two ways of reducing costs: reducing the cost of the same output; or increasing the output at the same cost.

The importance of carefully watching costs and marketing conditions is well illustrated on the Pacific Coast in the ill-advised apple orchard development. With an accurate knowledge of conditions and facts, the Federal Government and state authorities are trying to prevent a repetition of such mistakes.

### CLEARING THE STUMP LAND.

The Ducrest Stump Puller is a very powerful machine used successfully by numerous farmers to pull stumps by hand or with horse power. The small size is sent by parcel post and is easily moved when pulling. Mr. Ducrest, the inventor, who has cleared several thousand acres, has devised an easy method of disposing of the stumps after they are pulled without destroying the humus. The disposal of the stumps and leveling of the ground is generally more than half the work of clearing.

### CORN SILAGE FROM DRY FODDER.

Experiment on I H C Demonstration Farm at Aberdeen, South Dakota, Shows that Dry Fodder Makes Good Ensilage.

An interesting experiment in the feeding of silage on the International Harvester Company Demonstration Farm at Aberdeen, South Dakota, may be of interest to our readers. The 1915 corn crop failed to mature and was caught by the frost. It was brought in and stacked.

The fodder was placed in the silo in a dry condition. The following is a statement made by W. A. Coe, foreman of the Demonstration Farm. He says:

"We reserved about 85 acres of the corn fodder for ensilage. We have filled a 45-ton Pit Silo four times and probably have fodder enough to fill it two times more. About 200 bushels of corn for seed was husked out of this before the fodder was harvested.

"The first severe frost came on the twenty-first of September, killing the corn when it was just in the roasting ear stage. We began cutting it with a corn binder on September twenty-third. We let 20 acres stand from which to gather seed corn. This was harvested the latter part of October.

"We shocked the fodder in the field so that it would dry out and not heat after stacking. We began stacking on the tenth of November.

"We filled the silo the first time on the twenty-eighth of October; the second time, December eighteenth; the third time, January twenty-fifth, and the fourth time on March second.

"As the first filling was five weeks after we began cutting the corn, the fodder was quite dry. We ran enough water into the silo along with cut fodder to replace the moisture that had evaporated, so that it would cure. We found that the best way to get the water mixed with the fodder was to pipe it up to the top of the distributing pipe and then let it flow into the distributor, where the force of the air from the blower mixed it thoroughly.

"We have had excellent results in making silage from dry corn fodder. The cattle like the silage and are keeping in good flesh on it. For a farmer who has but one silo this is an excellent method. The ensilage keeps well in the Pit Silo. We have a door on the top of the silo to keep out the cold air. We usually place a cover made of heavy burlap over the top of the silage. This keeps it in fine condition, even in the coldest weather."

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON

## Ornamental Planting in the Rural Homes

Farmers are becoming more interested than ever in the planting of ornamental trees and shrubbery, beautifying and making the rural homes attractive.

Our booklets contain many suggestions and complete descriptive lists of ornamental plants of all classes. We cheerfully send you a copy and will reply to specific inquiries about any ornamental planting. Please mention this paper when writing.

## OREGON NURSERY CO.

ORENCO, OREGON

## Plant Pear, Walnut and Ornamental Trees

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

### OREGON WALNUTS LEAD

Last season our grafted Vrooman Franquettes sold for the highest price that walnuts ever sold for on the Portland market, over \$450.00 per ton for the total crop, and we are already taking orders for the coming season at the same high prices. Our oldest orchard last year paid the highest income of any in the Northwest of its age.

To show our confidence in the walnut industry we planted 50 additional acres last winter that are now making a good growth.

Our nursery is in fine condition and promises a good growth. All of our scions were cut from our own orchard from tested stock, to insure that they are true to name. Order your trees early this season, for all of our trees were sold last year before the planting season begun. If you are interested in walnut growing, don't fail to see our orchard and nursery this summer. Write for our walnut booklet.

GRONER & McCLURE

Hillsboro, Oregon

## BOXES For Fruit Growers and for Creameries

All kinds, Quality A1, Prompt Shipments

PACIFIC BOX COMPANY

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Tacoma, Wash.

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Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,

J. B. PILKINGTON, Nurseryman

Portland, Ore.

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WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

Milton Nursery Company, Inc.

Milton, Oregon



## IRRIGATION

Adequate, available moisture during growing seasons.

### IRRIGATING COAST PRAIRIE LANDS.

Yelm Irrigation Project Completed at a Cost of \$100,000; in Successful Operation.

On June 29th about 500 people, principally from Pierce and Thurston Counties, celebrated the official opening of the Yelm Irrigation Company's project on the Yelm Prairie. Enough of the ditches were filled to give the visitors a good idea of the successful distribution of water over these sandy gravelly prairies. The water was carried in the laterals the usual distances, prevailing in any irrigated district, and there is every indication that the irrigation water will perform the full duties of artificial watering without unnecessary waste, nor is there any danger of the soil here becoming water logged.

#### Untiring Efforts for Great Task.

Completion of this irrigation system is the result of five and a half years of work and agitation among the Yelm farmers, done of their own initiative and at their own expense, at a cost of more than \$100,000, so that not one foot of the land is heavily encumbered with taxes to pay for the work. That the productivity of the soil will prove equal to that of Sequim is believed assured, but the ardors of building the Yelm system were far greater than those at Sequim. Nine thousand feet of flumes have been built by the Yelm company, one section alone being 2,400 feet long, and some engineering difficulties have had to be overcome that would have staggered less courageous people. The water, coming from an intake about four miles below La Grande, is flowing through laterals in such wise as to irrigate 3,000 acres.

On the knolls of this section, the black loam soil has a depth often of four feet, while in nearly all places it is said to have a depth of 18 inches. The ditch system is 14 miles long. The north and south laterals are fed by flumes three feet wide and three and one-half feet deep, the water having a fall of two feet in 5,000 feet. The main ditch is six feet wide and four feet deep, and the water has a seven-foot fall in 5,000 feet. One section of land that has raised 35 bushels of oats to the acre and 200 sacks of potatoes without water is expected this year to produce 75 bushels of oats and a correspondingly increased amount of potatoes.

"The most important event in the history of the prairie sections," was the way J. P. Martin, president of the irrigation company, sized up the results of the farmers' work in his talk. He gave a brief history of the start of the irrigation "bug," the trips to Sequim and elsewhere, and then the beginning of work by the farmers themselves digging portions of the ditch. This was followed by the purchase of a steam shovel.

"Now," he concluded, "we believe that Yelm will be the demonstration that will cause a large portion of the prairie lands of Pierce, Thurston and Lewis counties to be developed similarly."

The plan of the company is to sell to actual home makers, and the tracts will be divided into units with that purpose in view, sufficiently large for good dairy farms, without giving speculators a chance to get at the "cream."

Governor Lister commended the good work of the company and in his address approved the plan of giving the real home builders every chance to make good whether on irrigated, or on logged-off lands. He would have the people provide ways and means also to maintain the upkeep of the many good roads being built in order that farmers may market their produce at minimum expense.

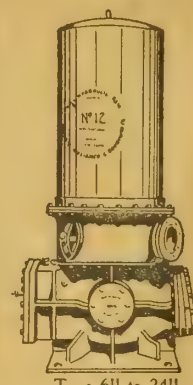
Mr. Peter Govan, of Sequim, Washington, in a short address, spoke of the similarity of the Yelm prairie land to those of Sequim, which 30 years ago were not considered of sufficient value by the assessor to record on the rolls. About 15 years ago irrigation was well under way there and today the farmers are raising 5 to 6 ton clover hay per acre, also great crops of vetch and peas. They grow the leguminous crops as much as possible because these increase the humus and general fertility of the soil. The silt of the glacial irrigation stream also increases the amount of necessary mineral elements and serves to prevent the water from sinking too rapidly. In this country of cool nights the prevailing crops should be clover, vetch and peas as basis, and for pasture the mixture should compose many varieties. The grain crops grown most profitably are oats, rye, and for the early silo crops vetch and wheat sown in the early fall to be cut for silage in June. In favorable localities corn is now grown abundantly for silage to be cut in October.

Mr. Govan predicted that with the Yelm prairie soil properly handled that the yield would gradually increase from year to year, as is the case at Sequim. The water is the principal element of any green crop and the problem of growing a large tonnage is easy of solution when the moisture is made available at the time when the temperature is right for the strongest growth. Irrigation is the assurance that the crop will not be short for want of moisture and with this irrigation system completed Yelm Prairie will blossom in the fullest verdure of the clovers, peas and vetch by another year. Here are excellent opportunities for profitable work in dairying. The Morris Brady Co., of Yelm, of which A. C. Little is president, will put the land of the Yelm Irrigation Company on the market with a view of covering the tract with home builders.

#### IRRIGATING WITH RAM.

Frank Seyfert & Sons, at Roy, Wash., have a small stream of water running through a part of their farm which has some fall in a certain distance. For several years past they have been figuring on how to make use of the water in this stream to apply on their clover fields, pasture land and for other crops, realizing that at least double the tonnage

## HILL RAMS



Type 6" to 24"

are the best rams made.

They will lift water higher with a given head than any on the market.

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Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

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On all apple, pear, peach, prune, plum, cherry, apricot, nut, shade and ornamental trees, berry bearing plants, flowering shrubs, vines, hedge plants, roses, etc.

We need more room in our nurseries for spring planting.

All stock clean, healthy and thrifty. Grown on virgin soil two years from sage brush.

Most complete stock in the Northwest from which to select.

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**SAVE MONEY**

By asking for this 266-page book today. A postal will do. First edition exhausted; second edition this bargain book now ready.

WM. GALLOWAY CO. Dept. Waterloo, Iowa

could be grown when the water is applied during the dry season. This spring they bought and installed a No. 12 Hill Hydraulic Ram, at a cost of \$650, and are now irrigating 80 acres very successfully. This ram, from the force of an 8 foot fall, will lift 576,000 gallons water every 24 hours to a height of 63 feet, where the water is delivered into a flume, then distributed over the field. Mr. Seyfert & Sons are highly pleased with the results of providing irrigation at such low cost.

Among others who have lately installed these rams, which are giving excellent results, are Joe Keeler, Sequim; Willoughby and Gallagher, Granite Falls; Nelson Murry, Roy; J. T. Dovey, South Kingston; H. Kregher, Brownsville, Wash.; J. E. Mohen & Son, Bothell and James Gibson, East Sound, Wash.

In the Coast Section are numerous places where the current in a stream is sufficient to afford a head for one of these rams to pump a considerable quantity of water, which properly and timely applied is the great crop producer.

## "Carco" KILLS MAGGOTS

A wonderfully successful spray for destroying maggots, grubs and worms which infest TURNIPS, RADISHES, BEETS, RUTABAGAS, CAULIFLOWER, CABBAGE, ONIONS, etc., and also recommended for combating crown borers in STRAWBERRIES.

This remedy has been tried out at Experiment Stations by Horticultural Inspectors and leading growers who are highly pleased with results.

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Send for our catalogue. Agents wanted.

SALEM NURSERY COMPANY

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Lieut. Bryan, U. S. N. stated before the Am. Soc. of Naval Engineers: "Oils made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils."

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Portable wood saw with 6 h.p. Waterloo Boy gasoline engine, or a King of the Woods Drag saw, 4 h.p., capable of 40 ricks per day, \$100 down and balance \$185 long time on either. Both are new. The factory price is \$350. Address

AGRICULTURAL ENGINEERING CO. Seattle, Wash.



## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. WILKINSON

## AMBITION.

By Harold W. Gleason.

Beside the fire, in the castle hall,  
Sat Kunigunde, a nobleman of Gaul;  
And by him sat his friend, a man of  
law;

While Thur, the noble's serf, lay on  
the floor.

And soon, with flowing bowl and  
jollity,

They boasted as to what their sons  
should be.

"My heir," quoth Kunigunde, "like  
me shall reign

In state o'er all this land of Aquit-  
aine."

"And mine," replied the lawyer,  
"shall, like me,

Become an advocate of high degree."  
The noble of a sudden saw a jest

In Thur, the serf, to entertain his  
guest;

So asked, "And what shall thy son  
be, O clod?"

Quoth Thur, "My son shall be a man,  
please God!"

## JAR BREAKAGE PREVENTED.

When breakage of jars occurs it is  
due to such causes as—

(1) Overpacking jars. Corn, pump-  
kin, peas, lima beans, and sweet  
potatoes swell or expand in process-  
ing. Do not fill the jars quite full  
of these products.

(2) Placing cold jars in hot water,  
or vice versa. As soon as the jars  
are filled with hot sirup or hot  
water, place immediately in the can-  
ner.

(3) If top cracks during steriliza-  
tion the wire bail was too tight.

(4) In steam canner, having too  
much water in the canner. Water  
should not come above the platform.

(5) Allowing cold draft to strike  
the jars when they are removed from  
the canner.

(6) Having wire bail too tight, thus  
breaking the jars or glass tops when  
lever is forced down.—Office of Ex-  
tension Work, North and West, States  
Relations Service.

## TRAPPING COCKROACHES.

A simple form of trap for catching  
cockroaches consists of any deep ves-  
sel or jar, against which a number of  
sticks are placed, and bent over so  
that they project into the interior of  
the vessel for a few inches. The ves-  
sel is partially filled with stale beer  
or ale, a liquid for which roaches  
seem to have a special fondness. In

the morning these vessels are found  
charged with great quantities of dead  
and dying roaches, which have climb-  
ed up the inclined sticks and slipped  
out into the vessel.

## BULLETINS FOR HOUSE-KEEPERS.

No. 298. The Fireless Cooker.

No. 342. The Model Kitchen.

No. 353. The Ice Box.

No. 309. Ice for Household Use.

No. 154. The Home Fruit Garden.

No. 169. The Farmer's Fruit Garden.

No. 175. Home Manufacture and  
Use of Unfermented Grape Juice.No. 203. Canning Fruits, Preserves  
and Jellies.

No. 388. Jelly and Jelly Making.

No. 73. Cooking Vegetables.

No. 84. Potatoes as Food.

No. 244. Cooking Quality of Pota-  
toes.No. 256. Preparation of Vegetables  
for the Table.No. 265. The Home Vegetable Gar-  
den.No. 295. Potato and Other Root  
Crops as Food.No. 342. Cooking Beans and Other  
Vegetables in the Home.

To secure these bulletins, address  
the Editor and Chief of Publications,  
Department of Agriculture, Washing-  
ton, D. C.

## TO KEEP PIES FROM STICKING.

Pies having no upper crust, espec-  
ially when filled with some kind of  
custard, are not easily removed from  
the tins when baked. The quickest  
and safest method of obviating this  
difficulty is to arrange two or three  
narrow strips of oiled paper or  
greased muslin across the bottom of  
the tins before putting the under  
crust into them. Let these strips of  
cloth or paper hang over the edges  
sufficiently to permit you to grasp  
them securely, and when the pies are  
baked, they may be immediately and  
easily transferred to a plate by using  
these strips as lifters. French pastry-  
makers have taken advantage of this  
"secret" for years, but few domestic  
cooks seem to know anything about  
it.—The Designer.

## ELIMINATE THE FLY.

An educational crusade against the  
house fly, in which every proper  
means of publicity should be em-  
ployed, is urged by the Department of  
Agriculture. In a new Farmers' Bul-  
letin, No. 679, it is stated that the  
danger from the house fly must be  
brought more forcibly home to the  
people before health officers can do  
effective work. By the expenditure  
of sufficient pains, any one individual  
may prevent flies breeding on his  
premises, but this will not rid him of  
the danger from flies if his neigh-  
bors are careless.

There is, however, no excuse at the  
present time for permitting flies to  
breed in anything like the numbers  
in which they have done in the past.  
The vast majority of flies develop  
from eggs which are laid in horse  
manure, and there are two simple  
ways of destroying the larvae, as the  
young insects or maggots, which  
hatch from the eggs are called.

Buy a LANG HOT BLAST  
SMOKE BURNING RANGE

MADE IN WASHINGTON

The only range that will burn  
wet and green wood, and hold  
fire overnight. Also burns coal.

INVESTIGATE—before you  
buy a stove. Send for catalog  
No. 11.

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SEATTLE, WASH.

Cook in a  
cool Kitchen

All the heat is concen-  
trated where it is needed  
—keeps you cool and  
makes for better cooking

NEW PERFECTION  
OIL COOK-STOVE

Why not cook with  
a modern oil stove this sum-  
mer and be comfortable?  
Bakes, broils, roasts, toasts.  
More efficient than your wood  
or coal stove, and costs less to  
operate.

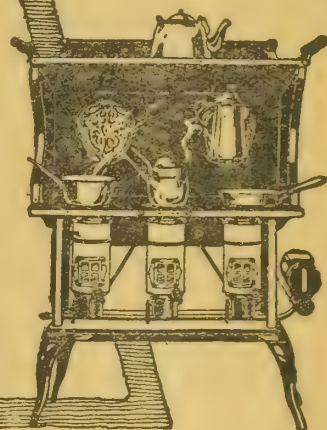
Better cooking because the  
long blue chimneys give stead-  
ier, more evenly distributed  
heat, under perfect control—  
like gas. No smoke or smell.  
In 1, 2, 3 and 4-burner sizes,  
ovens separate. Also cabinet  
models with Fireless Cooking  
Ovens.

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STANDARD OIL  
COMPANY

(California)

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Results  
Use  
Pearl Oil

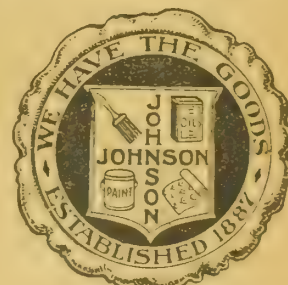


Sprinkling the manure heap with a  
solution prepared by adding one-half  
pound of powdered hellebore to 10  
gallons of water will destroy, accord-  
ing to recent experiments, from 88  
to 99 per cent of the larvae in the  
manure. If this is not done, the use  
of a simple maggot trap will prove  
equally effective. By experiments  
carried on by the Bureau of Entom-  
ology of the U. S. Department of  
Agriculture at the Maryland Agricul-  
tural College, it was found that the  
trap used there destroyed fully 99  
per cent of all the maggots or larvae  
breeding in a given lot of manure.

CANNING FRUITS AND VEGE-  
TABLES.

The Department has issued bulle-  
tins that give specific directions for  
the preserving and cannings of fruits  
and vegetables without the use of  
preserving powders or canning com-  
pounds. These bulletins may be ob-  
tained without cost from the Depart-  
ment of Agriculture. Application  
should be made for Farmers' Bulle-  
tin, No. 203, on Canned Fruit, Pre-  
serves and Jellies, and No. 521 on

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Lanterns, Lamps,  
Mantels and repairs  
you require early.  
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## Bake Day

is always a pleasure if

CRESCENT  
BAKING POWDER

raises the dough  
because results  
are SURE

SOLD BY  
GROCERS 1 lb. 25c

Crescent Mfg. Co.  
Seattle, Wash.



Canning Tomatoes at Home and in Club Work. Also Forms N. R. 22, N. R. 23, N. R. 24, N. R. 34 and N. R. 37 of the Office of Extension Work, North and West, States Relations Service.

### CLOTHES FOR THE BABY.

Instead of spending your time on the worse than useless task of embroidering and ruffling baby's clothes, spend it in resting and in taking much needed outdoor exercise. So says Miss Ethel Ronzone, of the University of Missouri, College of Agriculture.

This ruffling and decorating of baby clothes is passing. The needs of the child are being considered instead of placing the emphasis on appearance. The need for proper and adequate clothing for the child is of great importance. The new-born babe is not capable of regulating its body temperature. Since the temperature must be kept about 98 degrees Fahrenheit, it is necessary to control it by the use of clothing. This does not mean that the child be wrapped in several layers of flannel all the year around. It is as necessary to provide for getting rid of excess heat in summer as it is to provide for conserving heat in winter.

### CLEAN FOOD STORES.

The food officials of many States are giving attention to the sanitary condition of country and city grocery stores, according to the officials engaged in the enforcement of the Federal Food and Drugs Act who recently have investigated the matter. The country store is both a collecting and distributing agency of foods. It sells food of many kinds to the farmers and at the same time buys from them for shipment to the city butter, eggs, fruits, vegetables, poultry and other products of the farm. If the shelves and counters are laden with dust, if cobwebs hang in every nook and corner, if flies, bugs, and vermin inhabit the place, the food products are certain to be more or less contaminated and likely to become dangerous to health. The reports from various State officials indicate that many stores have been found in the past to be in such a condition.

One of the most effective means

that has been employed is that of securing the cooperation of women's clubs and civic organizations. When a delegation of women customers calls upon a merchant and suggests that he clean up, he is compelled to put his store in good condition and to keep it so. When the grocerymen in a town find that a large portion of the housekeepers are buying only from the cleanest stores, there arises a wholesome form of competition.

### JELLIED PRUNES.

2 tablespoons granulated gelatine;  
1½-lb. prunes;  
2\* cups cold water;  
1 cup sugar;  
¼ cup lemon juice.

Pick over, wash and soak prunes for several hours and cook until soft. Remove prunes, stone and cut into quarters. To the water in which the prunes were soaked add enough hot water to make 2½ cups and to it add the gelatine that has previously been soaked in ½ cup cold water. Add sugar and lemon juice. Set away to cool and when it begins to stiffen add the prunes. Stir twice while it is hardening to prevent the prunes from settling to the bottom.

### COMBINATION FRUIT DISHES.

An excellent combination for home-made jelly, according to the home economics experts of the department who have been studying the uses of different fruits, is canberry with apple. Equal quantities of cranberries and of apples cut up into small pieces should be just covered with water and boiled until the fruit is soft. Strain the juice through cheesecloth. Add to the pulp the same amount of water as at first, boil the pulp a second time, strain as before, and combine the two lots of juice. Add three-fourths as much sugar by measure to the juice, and boil again. The jelly is done when a few drops taken up with a mixing spoon will flake on the spoon as it cools instead of dropping off of it. Pour the jelly into glasses which have just been sterilized in boiling water and thoroughly drained. Seal the glasses in the ordinary way.

The pulp which remains after the juice has been drained off for jelly can be used to make excellent "marmalade," or "fruit cheese," as old-time housekeepers called it.

## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### CATTLE FEEDS WASTED.

A vast quantity of feed available for cattle is now either wasted absolutely or put to some less profitable use, says a recent report which the Department of Agriculture has just published as Part IV. of a comprehensive survey of the entire meat situation in the United States. Failure to utilize the full value of this material has increased unnecessarily the cost of producing meat, has diminished the profits from cattle feeding, and has discouraged many farmers from engaging in an industry essential to their permanent prosperity.

According to the report already mentioned, the loss in grain straw and corn stover amounts to more

than \$100,000,000 annually. Both of these products are disposed of most economically when fed to cattle in connection with some form of concentrated feed. Straw is especially valuable in carrying the breeding-herd through the winter, in wintering stockers, and as a supplementary roughage for fattening cattle. Stover, too, is an excellent feed for wintering cattle, especially mature breeding cows. Nevertheless, in many sections of the country where these products are abundant, little attempt is made to take advantage of their value for these purposes.

Of an annual straw crop of approximately 120,000,000 tons, it is estimated that only two-thirds is put to

## TEST OF 21 YEARS

The Northwest Grocery Company has been and is doing a strictly cash business with 10,000 satisfied customers. Why not you? Your mail order will receive the same careful attention as though you came in person.

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Gives you lowest prices on reliable Groceries. We pack and deliver to the freight depot free. Send postal today for our catalog and further information. Please mention this paper.

**Northwest Grocery Co.**

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TACOMA WASH.

## HARDWARE

Complete lines for needs of farmers. High quality, prompt service, right price.

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Write us your needs.

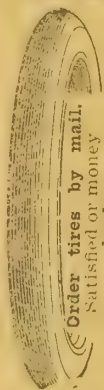
**HENRY MOHR HARDWARE CO.**  
1141 Broadway, Tacoma, Wash.

## Rhododendrons

Native Shrubs, Plants and Flowers, collected from the forest.  
Send for Circular.

**JOEL SHOMAKER**  
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## SAVE MONEY ON GUARANTEED TIRES



You can positively save 20 per cent to 40 per cent on all sizes of standard made tires—Fisk, Marathon, McGraw and others.

| Size  | Plain   | Non-skid |
|-------|---------|----------|
| 30x3  | \$ 8.45 | \$ 8.90  |
| 30x3½ | 10.90   | 11.50    |
| 32x3½ | 12.00   | 12.65    |
| 32x4  | 16.45   | 18.50    |
| 34x4  | 17.75   | 19.10    |
| 36x4  | 18.65   | 20.30    |
| 37x5  | 27.75   | 29.65    |

(Send for complete price list.)

All Accessories at big Savings.

Write for Particulars.

**PACIFIC TIRE & RUBBER COMPANY**

604 E. Pike St.  
Seattle, Wash.

## Elderly Men!!

### YOUR OPPORTUNITY

Many middle-aged and elderly men are making good money selling our hardy guaranteed ornamentals, roses, fruit trees, berries, etc.

Our field reaches from Montana to Southern California, and from New Mexico to Northern B. C.

Cash Advanced Weekly. — Expenses partially provided. You will be surprised at the business you can get in your own locality.

Write Us Today. — If not interested, perhaps you know some energetic, intelligent man now unemployed.

**Washington Nursery Co.**

TOPPENISH, WASH.

Largest between the Rockies and Cascades.

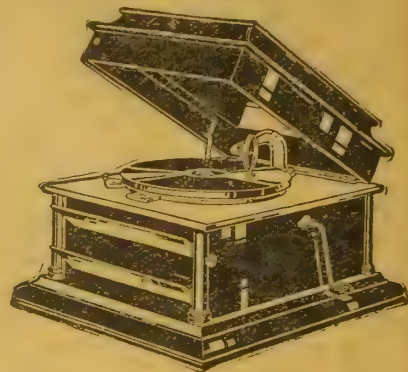
### FOR SALE

High Grade Guernsey Bull Calf, from heavy milking cow with 5.5 test. First check for \$20.00 takes him.

**W. H. FRANKLIN,**  
Milltown, Wash.

\$ **55** .20

This Wonderful Grafonola with sixteen selections on eight ten-inch double-face records. Terms to suit.



**All for \$55.20**

at

**EILER'S**

Tacoma's Most Complete Musical Service

Broadway at 9th Tacoma Theatre Bldg.

TACOMA, WASH.

## Rubber Stamps

Stencils and Seals. Mail orders promptly filled. Send or catalog.

**ACME STAMP WORKS**

(Two Factories)

1015 A St., Tacoma, Wash.  
214 Marion St., Seattle

## SPRAY-A-COW

A MOST SATISFACTORY  
FLY REPELLENT

For use in protecting cows and domestic animals from the tortures of flies, gnats or mosquitos.

Makes Satisfied Cows; Increases the Flow of Milk.

### Directions:

Use with a spray, applying a little at a time, as often is necessary. Spray or sprinkle on manure heaps also, to destroy the young flies and eggs. Remember: Do not soak the animal to the skin.

Ask your dealer for the Spray-A-Cow or Fly Repellent. or write us.

**Plumber Drug Co.**

Portland, Oregon

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.



its best use—live stock production. Of the remainder a little more than one-half is sold or turned under and the rest—15 per cent of the total crop—is burned. Burning is practically an absolute waste and although plowing under does contribute something to soil fertility, the benefit to the land is less than that which would be derived from the use of the straw to produce manure. "Of all systems of obtaining permanent soil fertility," says the report, "none is so practical or as easily available as that of feeding live stock."

The average value of all kinds of straw is placed at about \$5 a ton. In many sections, of course, no such price can be realized for it, and as a matter of fact, only about 8 per cent. of the crop actually is sold. The figure mentioned, however, may be taken as representing the value to the farmer of straw if he will use it properly as for feed or bedding.

#### Oil Meals.

The value of meals is far better appreciated in Europe than here. Denmark, for example, feeds annually 478 pounds of oil cake to each of her mature cattle. The United States approximately 24 pounds. Furthermore, the European feeder is aware of the fact that the high-protein meal, while more expensive to buy, is more economical to use. Meal of this quality is seldom sold on the domestic markets because the American farmer has not yet learned its value. Cottonseed and linseed are perhaps the best known of the oil meals, but there are others, the use of which as feed could be profitably extended. Both peanut and soy bean meal and cake, for instance, are in good demand in Europe.

The efficient use of these and other feeds discussed in the report is of the utmost importance to the American farmer, it is pointed out, because the day when close calculation in feeding was not necessary is, in all probability, past. Hereafter it is likely that success will depend upon ability to put to the best use all available products. A greater knowledge of what these products are and of the ways in which they can be fed will result in the elimination of enormous waste.

#### DAIRY HUSBANDMEN.

The U. S. Civil Service Commission announces competitive examination for dairyman, August 8th, to fill vacancy at an entrance salary of \$1800 to \$2500 per year. Those interested will apply for Form 2118 to the Commission at Washington, D. C., or to the postmaster at Seattle, Wash.

#### VALUE OF SILO ON DAIRY AND LIVESTOCK FARMS.

Practical dairymen who are silo users say that the silo on the farm means a saving of 5 to 10 cents a pound in the cost of producing butterfat, beef feeders say it saves from \$1 to \$1.50 per hundred pounds in producing beef, and feeding experiments at experiment stations bear out these statements, says W. A. Barr, Dairy Husbandman, Oregon Agricultural College. On this basis ensilage under normal conditions is worth \$4 a ton. With an increase of 50 per cent in feed prices it is worth \$6 a ton. Reports of 30 farmers whose records allow the compilation of accurate data, show an average cost of \$2.75

a ton for corn silage, including the following factors incidental to production; land rental; cost of fertilizer and its application; preparation of the seed bed, cost of seed, planting, cultivation and harvesting; and interest and depreciation on machinery and silo. The supplementary and replacement value and beneficial physical effects bring the value of silage higher.

#### Locating the Silo.

As silage is a heavy feed, the first consideration in locating a silo should be convenience for feeding. This as a rule requires it to be placed at one end of the barn, especially if the rows of cows face each other and there is a feeding alley between. Placing the silo in the barn is not advisable, for it is not always convenient to fill, and space is occupied that may otherwise be used to advantage. Silos should be so constructed and cared for as not to need the protection of the barn.

#### Silo Floor.

The silo floor may be dispensed with only when the ground on which the silo is located is very firm. The advantages of a floor are: The silo can be easily cleaned; protects silage from rats; and no loss from spoilage at bottom. A tile of vitrified sewer pipe or two-inch galvanized iron pipe should be laid under the floor. This drain removes excess moisture when from mistake or bad weather conditions the silage crop is put into the silo with too much moisture. The mouth of the drain should be covered with a heavy wire screen of fine mesh.

#### CO-OPERATIVE CREAMERIES.

Where properly founded cooperative creameries are successful and extremely valuable to the community. In the Pacific Northwest the number in successful operation are gradually increasing.

The outstanding advantages of the farmers' cooperative creamery are: (1) The principles and policy governing the operation of the creamery are determined by the producer of the milk and cream; (2) overhead charges may be kept down to the minimum; and (3) the profits of the business revert to the producer.

#### Difficulties.

Some of the difficulties of the cooperative creamery are (1) The marketing of the product; (2) competition in buying cream; and (3) efficient management.

The difficulties of marketing the product of the cooperative creamery are probably no greater than those confronting the individual local normal conditions in worth \$4 a ton. to get onto the proper market the cooperative creamery can compete successfully with the city creamery on the city market. The main difficulty in the West thus far has been that the local creameries, instead of building up a trade of their own in the city, have asked the city creameries with which they are competing in cream buying to market their butter for them. So long as this condition exists the cooperative creamery will, of course, have difficulties in marketing its surplus product. On the other hand, the fact that a good quality of butter can be made in a cooperative creamery helps it in the marketing of its product.

At times cooperative creameries have difficulties with their stockhold-



## YOU NEED A NEW DE LAVAL SEPARATOR NOW

### 1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE THE SKIMMILK IS poorest without a separator in hot weather and often more harmful than helpful to calves

BECAUSE TIME IS OF GREATEST value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

### 2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF the poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

ed for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly. BECAUSE AN IMPROVED DE Laval is so much simpler and more easily handled and car-

BECAUSE THE DE LAVAL Separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

**LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST**  
We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

## DE LAVAL DAIRY SUPPLY CO.

SAN FRANCISCO,  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

SEATTLE

## GUERNSEYS Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

**CHICONA FARM, Chinook, Wash.**  
A. L. Gile, Prop.

## HIGH QUALITY FEEDS

Shorts, middlings, bran. Dairymen should get our prices now per ton or car lots. We also manufacture Hen and Chick Foods. All cereals.

**Keystone Cereal Company**

2311-17 Jefferson Ave.,

Tacoma, Wash.

### Jersey Bulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

**EDWIN PETTETT**  
Dungeness, Wash.

### GUERNSEY BULL FOR SALE

My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnar 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

**M. S. Shirley, Proprietor**  
PLATEAU FARM,  
Haller Bldg. Seattle, Wash.



ers in persuading them to patronize their own creamery, rather than to ship their cream to some outside creamery which may, for a short time, offer a higher price for butter fat. This, of course, is a short-sighted way for the stockholder of the cooperative creamery to treat the local concern, as the added price which may be offered him for a short time by another concern is made possible only because of the fact that the cooperative creamery exists in that locality. Unless the cooperative creamery is patronized it stands to reason that it must go out of business.

#### Method of Paying for Butter Fat.

Several systems of paying for butter-fat at cooperative creameries have been devised. In some cases no interest or dividends are paid on the subscribed stock, but all the money received for butter, after the running expenses have been deducted, is divided among the cream patrons pro rata per pound of butter-fat. Another system is to pay a certain per cent of interest upon the stock, this sum being taken out each month and counted in with the expenses for the month. After deducting the expense, the money is divided among the patrons pro rata per pound of butter-fat delivered. Still another system which is followed in some instances is to pay a price for butter fat based on some standard market quotation and at the end of the year divide the profits among the stockholders as dividends or among the patrons pro rata on the pounds of butter fat delivered.

#### DAIRYMEN'S PROFIT MARGIN

In the publication on Dairying, Poultry and Stock Raising, issued by Secretary of State I. M. Howell, Olympia, some statements are given regarding profits derived by some of the dairymen. It is plainly to be seen that where the cows are of good yielding capacity, about 75 per cent of the feed required raised on the farm and where silos are used that the profit margin is very fair, compared with dairymen who have not this foundation as a working basis. Good management means the adoption of the methods which afford the best margin of profit as soon as it can possibly be accomplished.

Here are some examples:

W. J. Payne, Kittitas county, milks from 20 to 30 cows, Jersey and Holstein breeds. He farms 90 acres of land, making extensive improvements at the same time. About 75 per cent of feed is raised on his farm.

#### Receipts

|                      |            |
|----------------------|------------|
| Milk (12,775 gals.)  | \$3,832.50 |
| Cream (730 gals.)    | 912.50     |
| Fed to Stock         | 150.00     |
| Calves Produced (45) | 270.00     |
| Cum Receipts         | 500.00     |

Total Receipts .....\$5,665.00

#### Expenses

|                    |           |
|--------------------|-----------|
| Hay (25 tons)      | \$ 200.00 |
| Ensilage (85 Tons) | 425.00    |
| Roots (2 Tons)     | 10.00     |
| Grain (1,600 Bu.)  | 700.00    |
| Labor              | 500.00    |
| Losses             | 400.00    |
| Pasture            | 75.00     |

Total Expenses .....\$2,310.00

profits for Year .....\$3,355.00

E. L. Brewer, Satsop, Grays Harbor county, keeps 25 Jerseys. He con-

siders the future of dairying bright and his section of the state better adapted to dairying than any other business.

#### Receipts

|                 |            |
|-----------------|------------|
| Milk Sold       | \$1,800.00 |
| Cream Sold      | 1,922.37   |
| Fed to Stock    | 200.00     |
| Consumed        | 73.00      |
| Calves Produced | 1,500.00   |
| Stock Sold      | 1,175.00   |
| Hogs Sold       | 1,050.00   |

Total Receipts .....\$7,720.37

#### Expenses

|                    |           |
|--------------------|-----------|
| Hays (50 Tons)     | \$ 500.00 |
| Ensilage (60 Tons) | 300.00    |
| Roots (100 Tons)   | 300.00    |
| Oats (15 Tons)     | 400.00    |
| Pasture            | 300.00    |
| Other Feed         | 500.00    |
| Labor              | 2,000.00  |
| Losses             | 200.00    |
| Other Expenses     | 100.00    |

Total Expense .....\$4,600.00

Total Profits for Year .....\$2,120.37

In this case the labor is more completely figured.

George F. Trott, Auburn, King county, keeps 42 good grade Holstein Friesian cows, devoting about 64 acres of land to the industry. He buys all hay, raising feed and enough ensilage corn to fill a 60-ton silo, which saves him 30 tons of alfalfa hay yearly.

#### Receipts

|                             |            |
|-----------------------------|------------|
| Milk Sold (265,758 Lbs.)    | \$3,480.00 |
| Fed to Stock (15,600 lbs.)  | 195.00     |
| Consumed (630 qts.)         | 18.90      |
| Calves Produced (18)        | 360.00     |
| Cows, Calves and Pigs Sold. | 697.65     |

Total Receipts .....\$4,751.55

#### Expenses

|                        |            |
|------------------------|------------|
| Hay (100 Tons Alfalfa) | \$1,300.00 |
| Ensilage (60 Tons)     | 240.00     |
| Grain                  | 75.00      |
| Pasture for 7 Months   | 300.00     |
| Labor                  | 820.00     |
| Losses                 | 85.00      |
| Other Expenses         | 100.00     |

Total Expenses .....\$2,920.00

Profits for Year .....\$1,831.55

The above all have silos. Following are two farmers who do not report silos.

G. Van der Griend, Lyman, Whatcom county, keeps 20 Guernsey cows with 60 acres of land for dairying. He raises most of his feed. Capital invested about \$28,000.

#### Receipts for Year

|                              |            |
|------------------------------|------------|
| Cream                        | \$1,766.38 |
| Fed to Stock (104,455 lbs.)  |            |
| Milk @ 25c a Hundred)        | 261.00     |
| Consumed (200 lbs. Butter,   |            |
| 3,650 gals. Milk, Estimated) | 125.00     |
| Calves Produced              | 145.00     |
| Registered Bull              | 150.00     |

Total Receipts .....\$2,447.38

#### Expenses

|                                                          |           |
|----------------------------------------------------------|-----------|
| Hay (20 Tons own Raising @ \$15, 13 Tons Alfalfa @ \$12) | \$ 456.00 |
| Roots (12 Tons @ \$4)                                    | 48.00     |
| Grain (Oats, Bran, Oil Meal, Molasses Feed)              | 376.00    |
| Pasture (20 Acres Permanent and Meadow in Fall)          | 160.00    |
| Straw                                                    | 40.00     |
| Labor (One Hired Man @ \$25)                             | 300.00    |



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

#### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

**HERMAN STEFFEN**  
MONROE, WASH.

### Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

**WILLIAM TODD & SONS**  
NORTH YAKIMA, WASH.

### Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

**PACIFIC COLD STORAGE CO.**  
N. P. Wharf, Tacoma, Wash.

### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

**A. E. SMITH CO., Sumas, Wash.**  
(or White Building Seattle)

### PUGET SOUND HERD HOLSTEINS

Production as well as Individuality  
Home of the Worlds Record Milch Cow

|                                      | One year<br>Butter. | One year<br>Milk. |
|--------------------------------------|---------------------|-------------------|
| Lutscke Vale Cornucopia              | 998.6               | 31,239.2          |
| Gettie De Kol                        | 1,082.4             | 23,471.9          |
| Chimacum Wayne Boon 2d, 2-year-old   | 882.2               | 21,581.1          |
| Sena De Kol Ononis, 3-year-old       | 846.2               | 20,572.9          |
| Forum Quirinus Gold Leaf, 2-year-old | 747.7               | 17,637.7          |

This is a sample of a few of our yearly records. Young stock for sale.

**WM. BISHOP, Chimacum, Wash.**

## Waikiki Farm

Breeders of

**JERSEY and Ayrsh re Cattle**  
**Duroc Jersey Swine**  
**Shropshire Sheep**

**IRA P. WHITNEY, Supt.**

**Route 7, Spokane, Wash.**

## Cleaner spark plugs

Your spark plugs will keep cleaner if you use a straight-distilled, refinery gasoline. A mixed or imperfectly refined gasoline breaks up and deposits carbon instead of exploding completely.

**Red Crown**  
*the Gasoline of Quality*

is the all-refinery gasoline—not a mixture.

DEALERS EVERYWHERE AND AT OUR SERVICE STATIONS

**STANDARD OIL COMPANY**  
(California)





|                      |            |
|----------------------|------------|
| Losses .....         | 120.00     |
| Total Expenses ..... | \$1,500.00 |

Profits .....\$ 947.38  
M. M. Makiyama, Kent, King county, has 45 cows. He says: "I experienced considerable loss in income as compared with a normal year, because the price of milk was very low."

#### Receipts

|              |            |
|--------------|------------|
| Milk .....   | \$5,500.00 |
| Calves ..... | 250.00     |

Total Receipts .....\$5,750.00

#### Expenses

|                      |            |
|----------------------|------------|
| Hay (110 Tons) ..... | \$1,220.00 |
| Pasture .....        | 1,000.00   |
| Other Feed .....     | 1,000.00   |
| Labor .....          | 720.00     |
| Losses .....         | 450.00     |
| Other Expenses ..... | 600.00     |

Total Expenses .....\$4,990.00

Profits .....\$ 751.00

### RATION FOR MAXIMUM MILK FLOW.

The feed known as roughage is generally recognized by dairymen as the most important of the various materials. This is more fully realized when a good flow is obtained on grass alone as compared with other mixtures and a good fodder crop in the form of silage is the next most economical feed after grass.

This phase in the economical feeding of cows is well explained by Valancey E. Fuller in the Holstein Friesian Register and affords some valuable pointers to dairymen in the Pacific Northwest who necessarily must figure as closely as possible on the cost of feed.

"When increasing any feed for a dairy cow one-half pound per day will be just as effective as if the increase were one pound, thereby holding in reserve some of the grain to be given later on.

#### Starting on Lactation Period.

"A cow should come to her full flow of milk gradually, rather 30 days than in a week, and she should be lightly fed at first. Give the mash for the first three days, and then the light feed she should be started off with will depend on the condition she is in at the calving time. If she has a lot of lean flesh on her made from protein feed before she calves it is my practice to feed from the fourth to the fourteenth day after calving the following ration: 300 lbs. bran, 300 lbs. ground oats, 100 lbs. linseed meal. If she is well conditioned, 2 lbs. of this is enough the fourth day, and it should be increased at the rate of ½ lb. per day so long as she continues to increase in her milk; but if she does not, do not add the extra half pound the day following, nor until she does make more milk. While on this light ration, if she has been properly conditioned, I like to confine the grain, even for a Jersey or a Guernsey, to 1 lb. to every 4 lbs. milk.

Here is an example of how this has worked out: In the March Guernsey Journal, the highest cow reported in fat was a member of the Elm Leigh Herd, Putney, Vt. Her percentage of fat was 6.02 and she yielded in January 98.97 lbs. fat. While on this light ration, she gave 46 lbs. of 6.02 per cent milk on the following ration: 5 lbs. alfalfa, 5 lbs. hay, 10 lbs. silage,

50 lbs. beets, 4 lbs. bran, 4 lbs. oats, 1 lb. linseed meal, together with 2 lbs. dried beet pulp. The nutrients in this ration were enough to make only one-half that amount of milk of as high a fat as she was giving; but she supplied the protein that the ration did not have from her own body. Her normal fat was 4.5 per cent, about; and she came down to that fat within 45 days. The high fat was unquestionably due to her high condition. The quicker the fat comes off, the higher is the percentage, as a rule. It follows that if a cow is to be tested merely for 7 days, she should be fitted with a fat that goes on quickly and comes off quickly. If, on the contrary, she is to be carried for a year, the fitting should be through protein feeds which come off more slowly. Pasture grass makes a fat that comes off quickly.

#### Roughage the Important Part.

The most important part of the cow's feed is not grain, but roughage. This has been demonstrated many times with the 900 cows, scattered all over the country, that I am feeding. A few cases will suffice to show this to be true. In a New Jersey herd where 75 cows are used to produce certified milk, we were short 50 qts. in filling our orders. They were fed alfalfa hay grown in Colorado, which looked bright, appeared not too stinky, was not mouldy, and altogether looked desirable. But the cows knew better than we did and would not eat more than 8 lbs., whereas they generally ate 10 lbs. The silage had already been increased 5 lbs. per cow in an effort to make up the milk shortage. Just as soon as the silage grown on the home farm, first cutting, was available, it was fed. No other change was made in the feeding, care or management. In five days after the change to home-grown alfalfa hay was made, the yield was 120 qts. over the demand, or a total of 170 qts. from the 75 cows, due entirely to the change in roughage. Not needing so much milk, we took off 5 lbs. of silage, yet the flow remained materially in excess of the contracts.

Last week the same thing occurred in a Pennsylvania herd I am feeding, with 109 cows in milk. They were yielding very evenly, varying very little from day to day; yet on receiving a poor quality of clover hay they dropped from 250 to 300 lbs. of milk, staying there just as long as they had poor hay; but on being fed a better quality they recovered nearly their former flow. Weather did not account for it. There was no change in the care, feed or milking, and the drop was unquestionably due to the poor quality of the roughage. It is my experience that unless cows are fed all the hay they should be, according to their weight and milk flow, and that of a good quality, no grain can ever take its place."

#### MILK KEPT IN HOMES.

Clean, Cold and Covered Are Essentials.

Milk is a highly perishable food, and the length of time it will remain sweet and safe, especially for children, depends, the specialists say, almost entirely upon the constant care it receives from cow to consumer. Milk passes through three agencies—the producer, the dealer, and the consumer. If the first two have done

their part, clean, safe milk will be delivered, thoroughly chilled, to the consumer. The consumer's responsibility begins the moment the milk is delivered at his doorstep.

#### Where There Are Children.

Care of milk, important for all, is a vital necessity in a home where there are children. It is absolutely essential to the safety of babies. No intelligent mother will leave to an ordinary servant the task of caring for or preparing the milk for her baby. Mothers of small children should get, from their own physicians, explicit directions for the proper handling of milk and for cleaning and sterilizing nursing bottles. Pamphlets on infant feeding may be obtained from the municipal milk stations or health officers. Milk for babies can not be kept too cold, and too much care can not be given to keeping it clean and covered.

Further information on this subject may be had by writing to the U. S. Department of Agriculture, Washington, D. C., for Farmers' Bulletin 413, "Care of Milk and Its Use in the Home."

#### PEPSIN FOR CHEESE MAKING.

##### A Substitute for Rennet.

A 5 per cent solution of scale pepsin in water, used at the rate of four ounces of solution to 1000 pounds of milk, has been found by experiments at the Oregon Agricultural College to be a substitute for the use of rennet in cheese making, forming a product that judges are unable to tell from the normal rennet curd.

This is important for cheesemakers when rennet goes to too high a price or is out of the market. Rennet manufacturers in this country will probably be in the market for all the calves stomachs to be obtained unless the cheesemakers are satisfied to use the pepsin substitute.

#### HOLSTEINS AT RECORD SALE

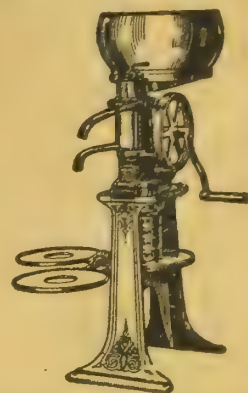
The National Sale at Detroit, Michigan, Sets High Average Price.

The sale of purebred Holstein-Friesian cattle held by the National Holstein-Friesian Sale Company of Michigan at Detroit, June 8 and 9, following the annual meeting of the Holstein-Friesian Association of America, was remarkable in many respects and without precedent, writes Secretary F. L. Houghton. Consignments to the sale consisted of a few selected individuals of excellence from each of the herds of leading breeders all over the country and were personally inspected and approved by the sale director, H. A. Moyer, of Syracuse, N. Y., a breeder of successful experience and high repute, chosen for the position by the company's committee.

The buyers at the sale, like the consignors to it, may be characterized as national, consisting of breeders in attendance at the meeting of the great organization of Holstein breeders which has a membership of over 9,000—the largest dairy-breed organization in the world. The results of this congregation of favorable conditions were as follows: A total of 140 animals sold for \$155,090, an average price per head of \$1107.78. The highest price paid for one animal was \$20,000—for King Champion Rag Apple 179305, a bull 7 months old, consigned by Oliver Cabana, Jr., Elma Center, N. Y., and bought by A. W.

# ANKER HOLT

THE LEADER OF ALL CREAM SEPARATORS



Send to us at once for descriptive information you should know about this separator, as to its simplicity, its record for close skimming, its easy running quality, its self balancing bowl, its perfect oiling system, and what users say about it. It is the popular separator wherever tried. We are shipping them to all parts of the Northwest. Complete equipment for creameries and cheese factories. Dairymen should have out catalog.

Northwest Creamery Supply Company  
306 Second Ave. So., Seattle

### RIDGEVIEW FARM

#### DUROC JERSEY HOGS

Champion prize herd at the State Fair. Quality unsurpassed. A few young boars and bred sows for sale. Write for full particulars and prices.

#### ROBERT NELSON

Route 2 North Yakima, Wash.

### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Una, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.

### DARK FAWN JERSEY BULL CALF

Born October 28, 1915. Dam in Register of Merit with record of 7771 lbs. milk, 494 lbs. 7 oz. butter in year from three teats; sire's dam 598 lbs. butter. Calf is a good individual and backed by good records made under ordinary farm conditions. Price \$75.

David C. Dilworth Buckeye, Wash.



Green of Middlefield, Ohio. King of the Pontiacs Segis 169124, a bull one year old, consigned by the Lawson Holding Co., Inc., La Grangeville, N. Y., sold for \$6,000, bought by Flanders Stock Farm, Orchard Lake, Mich. Mr. Cabana's consignment of 11 head brought an average price of \$2,900, and the 5 head consigned by the Lawsons average \$2,530 each. High prices were also paid for the stock consigned by John Arfmann, Middletown, N. Y. (average 15 head, \$1,436.66); The Munroe Co., Spokane, Wash. (average 12 head, \$1,220); Bernhard Meyer, Finnerne, N. J. (average 11 head, \$1,415.45), and The F. F. Field Holstein Co., Brockton, Mass. (average 4 head, \$1,198.75).

The object of this sale was to see what could be done selling Holsteins at auction under best possible conditions, including cattle of highest merit, best class of buyers and methods above reproach. The result was the highest average price ever made in a Holstein-Friesian sale. The former record public sale average was \$866, secured at the famous Dollar Estate dispersion sale where the bull, Rag Apple Korndyke 8th, was purchased for \$25,000 by Oliver Cabana, Jr., consignor of the highest priced animal to the Detroit sale. This bull is the sire of the \$20,000 bull that topped the Detroit sale, which is King Champion Rag Apple, consigned by Oliver Cabana, Jr., Elma Center, N. Y., and purchased by A. W. Green, Middlefield, Ohio.

#### Washington Breeders Among Leaders.

The people of Washington are highly honored by its Holstein breeders at this sale. The top price for cow was paid to the Munroe Company, of Spokane, Wash., by the Cass Farms Co., Sumner, Iowa, for Jessie Fobes Bessie Homestead 100742, bought for \$4,600. She was born March, 1907, has five 7-day records averaging 29.54 lbs. butter, and her best record is 34.96 lbs. This and her 142.16 lbs. 30-day record were the highest known when made.

Mr. H. C. Davis, Granger, Wash., paid \$3,000 for the young bull Finnerne Pietertje Fayne 98104, at this sale.

The Hollywood Farm, Hollywood, Wash., bought four females ranging in price from \$410 to \$3200, and the bull Spring Farm Pontiac Cornucopia 16th for \$950.

William Bishop, the veteran Holstein breeder, Chimacum, Wash., was elected to the board of directors of the American Holstein-Friesian Association at its recent meeting in Detroit, Mich. The progress of the Holstein-Friesian cattle in Washington has astonished even the most sanguine of the Eastern friends of the breed, and they recognized the Northwest in a very practical way through the selection of one of the men who have done much to popularize the breed.

The natural environments for good breeding and dairying in the Pacific Northwest, coupled with foresight and skill as evidenced by the work of Mr. Bishop and others is setting a pace that is making breeders in other parts of the country take special notice.

#### MONTESANO COW TESTING ASSOCIATION.

The recent report of the tester of this cow-testing association shows

that about 15% of 445 cows under test made above the 40-pound butter fat mark for 30 days.

Mr. McKenna, the tester, has compiled some interesting data regarding the number of cows of the different breeds that were on test for the month, and the average production for the different breeds. In considering these averages one should take into account the number of representatives of the different breeds that were on test. The age of the cows and the length of time that they have been fresh both have a direct bearing on these averages, says C. F. Monroe, the county agriculturist.

Number of cows in association, 445; purebred Jerseys, 40; grade Jerseys, 207; grade Shorthorn, 85; grade Holstein, 72; purebred Ayreshires, 15; grade Ayreshires, 10; purebred Guernseys, 10; grade Guernseys, 5; Red Poll, 1.

The 60 cows producing over 40 pounds of butterfat with an average of 51.5 for the 60 are grouped as follows: 16 purebred Jerseys averaged 68.7 lbs. fat; 4 grade Holsteins averaged 46.65 lbs. fat; 29 grade Jerseys averaged 46.5 lbs. fat; 10 grade Shorthorn averaged 45.39 lbs. fat; 1 purebred Ayreshire averaged 41 lbs. fat.

The prizes given by the Aberdeen Chamber of Commerce for the highest producing purebred and grade were won by J. H. Taylor and E. R. Brady respectively. Mr. Taylor's top record with the purebred Jersey cow Golden Massy Polo, was 90.7 pounds butter fat in 30 days, with E. L. Brewer's Cow Lad's Brown Beauty a close second, making 89.56 lbs. fat. The cows producing 62.22 lbs. and above were all purebred Jerseys.

The good work of this association has already demonstrated to the dairy farmers at Montesano that 85 per cent of their cows are not so profitable as they should be. It will mean more careful work in breeding, in selection and in feeding, and that practical methods to accomplish this result is being demonstrated by leading members in the association. The cow tester and the county agriculturist are conveying the information obtained from those who are most successful to those most in need of improvements. The demand for purebred sires is increasing very perceptibly.

#### GRAND CHAMPION JERSEY.

Dosoris Park Lily Makes Handsome Profit.

Dosoris Park Lily, the grand champion Jersey cow of 1915, was bred and is owned by the estate of Charles Pratt, Glen Cove, N. Y. She produced in 365 days 16,728 lbs. milk, containing 957.4 lbs. of butterfat. Her milk (certified) sold for 20 cents a quart, valued at \$1,556.08, and she returned a net profit over cost of feed of \$1,357.16. Her heifer calf is valued at \$2,000. This total sum represents 5 per cent. on a very large principal. The average farmer with many acres and a large herd does not make so good a showing in the profit margin as does the dairyman who makes such record with a single cow.

#### BETTERING THE QUALITY.

The Miller Bros. Creamery Co., Tacoma, state that both cream and eggs are coming in sufficiently in quantity from local districts for storage. The longshoremen's strike is interfering somewhat with shipments to Alaska

and to other outside points. While no general complaint is made against quality, the Miller Bros. Company would be pleased if more painstaking methods for cleanliness on the part of some farmers are observed. In order to prepare butter for the export trade on any commensurate scale, it is necessary that the quality is of a uniformly high grade, and while pasteurizing cream may remedy defects caused by neglect to some extent, it can never serve completely as a substitute for absolute cleanliness. The Miller Bros. Company is on the lookout for market developments, but this firm realizes that the average cream received must be such as to produce a desirable fixed grade of butter, and to this end urge that improvement be made wherever needed.

#### DAIRYMEN AND CREDITS.

As a rule dairymen are considered good credit risks, and the more painstaking their methods and the better their cows the better is their credit providing any is wanted. Mr. J. V. Shepard, manager of the DeLaval Dairy Supply Co., Seattle, has given the rural credit question considerable careful attention, and finds that farmers who practice business like methods do not usually complain about needed credit. The important factor with all farmers including dairymen as well is to secure a lower interest rate. Those who have cows averaging above the 40 lbs. butterfat per month, who raise a large part of their feed and have silos to keep it from being spoiled can pull through on an 8 per cent. interest rate, but they could do it more easily on a 5 or 6 per cent. rate, while at the same time there is considerable idle money waiting for a safe investment at that rate. The shiftless farmers and those who unknowingly have star boarders are not good credit risks, and of course would chafe under any interest rate. Rural credit facilities, both national and state, are on the way. One of the present needed precautions is to keep the expense of operation at the minimum.

#### BETTER COWS AND CREAMERIES.

W. W. Perkins, manager of the Northwest Creamery Supply Company, Seattle, is highly delighted with the progress being made by the various cow testing associations in Washington. Too many dairymen in the past have been working too hard and too blindly trying to make a living from dairying, not knowing that an average of 75 per cent. of their cows produced no net profit. These cow-testing associations, according to the opinion of Mr. Perkins afford a means of education which can be obtained in no other way. In fact, work of this kind is the only safe and sure way of building up a profitable dairy industry such as afford some degree of satisfaction to the individual dairyman.

Several new creamery and cheese-making plants in different parts of Washington and Idaho have recently been completely equipped with modern machinery for profitable and successful operation, without doubt when cows which produce 40 pounds of fat or more per month comprise the principal parts of the dairy herds.

## No Silo Too High Or Too Big

The Papec Ensilage Cutter has a reputation for filling the highest silos. It does this quickly, with least expense of time and power. It elevates at only 600 R. P. M. of the cutting wheel. Therefore, uses less power. As low as 4 H. P. will run the smallest size successfully. It is simple and built to last. Easy to erect—only the pipe to put up or take down. 4 sizes. Capacities 3 to 30 tons per hour.

See the Papec or get the 1916 Catalog before you buy an ensilage cutter.

**Dairy Machinery Co.**  
Seattle, Washington



We have just issued a new catalog covering our complete line of Dairy and Creamery Machinery; also barn equipment. On request we shall be glad to mail this to interested parties.

**DAIRY MACHINERY CO.,**  
907 Western Ave., Seattle, Wash.

#### HOLSTEINS

Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

**CLOVERIDGE FARM,**  
Seghers, Oregon. W. K. Newell.

#### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

### BLACK LEG

LOSSES SURELY PREVENTED  
by CUTTER'S BLACKLEG PILLS

Low priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.

10-dose pkg. Blackleg Pills, \$1.00  
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Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.

The Cutter Laboratory, Berkeley, California

## Only \$2 Down

### One Year to Pay!

# \$24

Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 51-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Post for free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

**ALBAUGH-DOVER CO.** (19)  
2187 Marshall Blvd. CHICAGO No. 655



**THE FEED PROBLEM.**

Will dairymen profit by the experience of the long feeding period of last winter? A considerable number have increased their forage crops, provided silos to save it, and others are preparing to make what purchases they will require at as early a date as possible. Mr. Palmer, manager of the Dairy Machinery Company, Seattle, has observed in travels through the dairy districts of the Northwest that many farmers forget too soon the lessons that ought to be heeded by such experiences as that of last winter. If sufficient feed cannot be obtained for a certain sized herd it is better to cut down the number. But the trouble in such case is usually with the quality of the animals. Cows yielding above the 40 pounds butterfat mark per month are always good security for feed even at high prices. The chances are that those who fell far behind in their profit accounts last winter had some cows that ought to go to the butcher, and that was one way of finding out where improvement should be made. The experience of the past winter was very expensive for some dairy farmers, and they should not fail to profit from the lesson. The good grass crop in the Coast section is helping out immensely.

**WALLA WALLA VALLEY****COW TESTING ASS'N.**

O. V. Patton, County Agriculturist. Records of the Walla Walla Valley Cow Testing Association, submitted by the tester, Mr. Lee C. Lewis, give good evidence of the value of pasture in milk production. Nearly one-sixth of all the cows in the association have qualified for the honor list, there being 66 cows that produced better than 40 pounds of butterfat for this month; 25 of them were above the 50-pound mark. The fact that a good many of the poorer cows have been already weeded out has increased the percentage of high producers.

Cow No. 47 in the State Penitentiary herd heads the list this month, with 69.5 pounds of butterfat. This is considered an exceptionally good record in that this month is the eleventh month in her lactation period. Of the young stock, a grade Jersey owned by Mr. J. M. Blue produced 44.6 pounds while only a two-year-old. A three-year-old grade Guernsey owned by Mr. Verner Brown produced 58.8 pounds of butterfat in the second month of her lactation period.

The herd of 16 grade Jerseys and Guernseys has averaged 42.2 pounds of butterfat for April, and 41 pounds for May on bluegrass pasture. The State Penitentiary herd of 40 cows, including four that were dry, averaged 37.7 pounds on grain and silage, and the Walla Walla College herd of six cows averaged 52.2 pounds on grain and alfalfa hay.

Highland Dora Veeman, a registered Holstein at the Walla Walla College, has produced 501 pounds of butterfat in six and one-half months, and will easily pass the 700-pound mark before the year is up. She will be tested for Advance Registry next year.

The following figures show some interesting facts in that they represent the cost of feed and profit on 468 cows, and show the great advantage in owning the high producers:

|                                                 | Those producing in lbs. |               |               |
|-------------------------------------------------|-------------------------|---------------|---------------|
|                                                 | Below 40 lbs.           | 40 to 50 lbs. | Above 50 lbs. |
| Average butterfat production .....              | 21.3 lbs.               | 44.0 lbs.     | 55.8 lbs.     |
| Average milk production .....                   | 481 lbs.                | 1042 lbs.     | 1280 lbs.     |
| Cost of feed .....                              | \$2.58                  | \$3.77        | \$4.02        |
| Profit per cow .....                            | \$4.15                  | \$8.86        | \$12.40       |
| Returns for each dollar expended for feed ..... | \$2.62                  | \$3.35        | \$4.09        |

A very good illustration has just been made that shows the value of being in a cow testing association. Hodgen Brothers just sold their entire herd of 46 head to a man from Scotts Bluff, Nebraska, and state that they received \$20 more per head for their milk cows on the strength of records in the association. Hodgen

Brothers are now going to stock up with pure bred Jerseys.

Those who have cows producing better than 50 pounds of butterfat for the month are State Penitentiary, R. H. Wellman, Walla Walla College, J. M. Blue, V. E. Brown, Wm. Reser, J. E. Jones, Mrs. H. E. Lowden, O. C. Stetson, Hogdon Bros., D. O. Saunders and J. L. Reavis.

**The Scandinavian American Bank**

OF TACOMA, WASHINGTON

With Assets of

**\$2,800,000**

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

**You can do your banking by mail****Bulls from World Records**

The dam of my herd bull is Lutsche Vale Cornucopia, the world record milk cow. Young bulls for sale from this breeding.

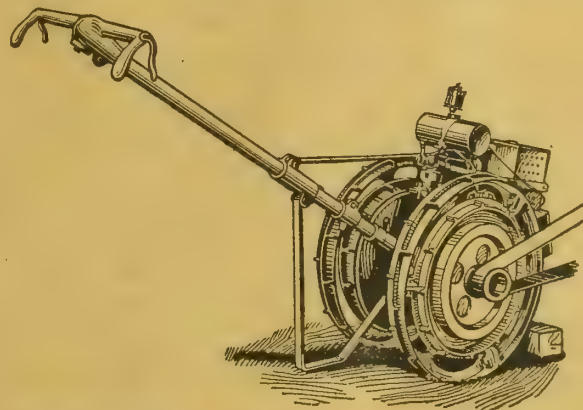
**E. W. McGEARY,****Friday Harbor, Wash.****25 Per Cent. Discount**

I will allow a 25% discount on all orders for nursery stock accompanied by the cash received before September 1st.

A complete line of fruit, shade and ornamental trees, roses, shrubbery, etc.

Instead of putting agents on the road, I will give their commission to you.

Satisfaction guaranteed in every respect.

**RICHMOND NURSERIES**RICHMOND BEACH  
WASHINGTON**GET ONE OF THESE****Beeman 4 Horse Power Tractor and Walking ENGINE**

The greatest labor saving device ever invented for the farm. Saves labor of hired man and horses. Will operate any belt driven machine. As handy as a man anywhere you want it. Costs no more than a stationary 4 horse Power Engine. Write for complete Catalogue.

**Agricultural Engineering Co., Seattle**

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AGENTS WANTED

**Salmon Faverolls**

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

**Island Nurseries & Fruit Farm**S. J. Harmeling & Son,  
Vashon, Wash.**Cockerels EGGS**

Write for prices.

**FRED A. JOHNSON,**

518 35th St.

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Single setting or lots

Tacoma, Wash.

**POULTRY OUTLOOK.**

Farmers are giving poultry the deserved attention it merits, both in providing feed and shelter stock. There is great opportunity for those who will give poultry fair treatment to make a nice profit margin during the next year.

**POWER DRAG SAW.**

There are 200 of the MacGregor portable Drag Saws in use near within a small radius near Puget Sound. Some companies are using six of these machines. A number of men are cutting cordwood, averaging from \$10 to \$12 per day with these saws. It is almost entirely built of annealed steel, strong, simple and easy to operate.

**STOCKMEN We Cure and Prevent TUBERCULOSIS**

IN CATTLE. DON'T DESTROY YOUR ANIMALS. RESTORE AND PROTECT THEM WITH KAR-NITUM. WRITE US NOW.

Kar-Ru Chemical Co., Tacoma, Wash.

**GOATS**

Toggenberg Milk Goats, breeding stock—both does and bucks for sale  
**PEARLANDS FARM, Lakeview, Wash.**



**BERKSHIRES**  
HEREFORDS-JERSEYS  
BARRED ROCKS  
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BOX 3 NEWPORT, WASH.

**HIDES**WOOLS - PELTS  
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HIGHEST CASH PRICES PAID  
PROMPT RETURNS—HONEST  
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Please Mention This Paper

**Leghorns**White  
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**SILVER CAMPINES**

Eggs for hatching stock and baby chicks. Our fowls are heavy layers. We practice Hogan system. Write for prices.

**MILLER BROS.**

Box 173,

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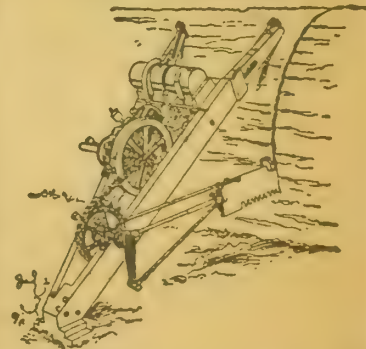
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20 CORDS IN 10 HOURS

LIGHT WEIGHT

**PORTABLE DRAG SAW**

3½ H. P. ENGINE



Chain Drive, can be used in any position. Bad weather does not hinder operation; one man operates it and moves it on the log; two men can carry it anywhere.

Write for complete information.  
Simplest, Strongest, Lightest and  
Fastest Drag Saw Built

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## MOTOR TRUCKS

2 1-2 Ton  
Capacity

Chassis  
Complete  
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Write Us for Prices

Do it now

We will solve your  
haulage problems.

### SIX CYLINDER MOTOR WORM DRIVE ELECTRIC STARTER AND LIGHTS

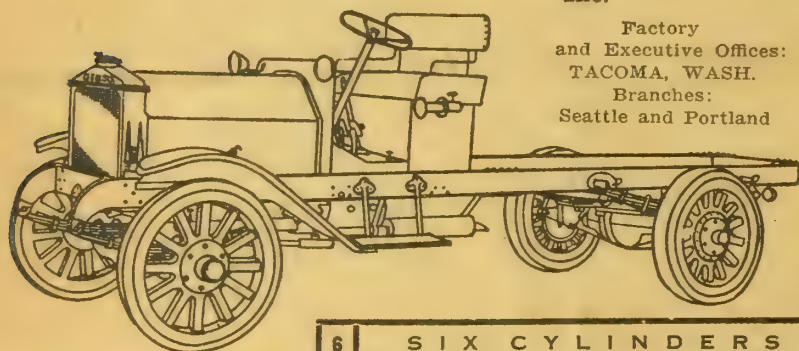
For five years we have been studying your hauling problems, and have designed the GERSIX Motor Truck to meet them. A sturdy, compact truck that laughs at hills—a truck of super-service.

Composed of standard parts made by the best engineering skill of the country, and combined into the GERSIX by experts who know what your traffic conditions demand.

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SIX CYLINDERS

SIX CYLINDERS

### CREAM AND MILK GATHERED BY MOTOR TRUCKS.

The motor truck is rapidly coming into use on milk and cream routes. In the Pacific Northwest and other localities where trunk and lateral roads are in good shape, the truck is doing this service both rapidly and economically, essential foundations for a better product at less cost, hence a larger profit margin to those who undertake the work.

At the present time there is a strong pressure brought to bear all over the land for a higher and more uniform grade of butter.

Cleanliness from the start at milking time to the finished butter is absolutely necessary, and the truck is becoming a factor in covering long distances, so that a large volume of cream can be collected at regular and short intervals, thus reducing the churning cost per pound, in making a better article than where the cream is "sour" when brought to the creamery.

#### Quality and Uniformity.

An observer writing in an exchange states that undoubtedly due to the increased production, the great markets of the country have seen more discriminating buying this year probably than ever before in their history. Where formerly only a very slight difference existed in the prices offered for the various grades, butter merchants are now showing decided partiality toward the better grades, and a single point difference in quality may often mean several cents difference in price per pound.

The strongest plea is for uniformity. This lack of uniformity is probably the weakest point in the local creamery system. Buyers frequently assert that with even their best creameries they never can be certain that the product of two different churnings is going to be alike, and many of them do not hesitate to say that this fact has a tendency toward more severe grading.

While there is still room for improvement in many local creameries, in others the very latest and best equipment and methods are in use, but even this latter class is not immune from the criticism of the market. They receive frequent complaints either that their quality is low or their product is not uniform from day to day.

Where the latter case exists, the buttermaker is starting to investigate the real source of his trouble—his raw material. That he should be criticized for the quality of his butter when his cream is of very doubtful merit, is undoubtedly unjust, but many of the most progressive buttermakers and creamery managers are not wasting time lamenting the situation; they are going after the patron.

The average patron has had his attention called to the manner of caring for his cream and milk, before it is delivered to the creamery, so frequently that this is gradually becoming a source of less and less difficulty to the buttermaker. But get-

ting the patron to deliver his cream frequently, especially in the summer, is quite another proposition.

#### The Gathering Problem.

The Creamery Journal in a special article on Gathering Cream with Motor Trucks, says:

"Many creameries have given up the plan of individual delivery by the patron or of community delivery as a bad job, and have turned their attention to the establishment of cream routes.

"This method of gathering cream is proving highly satisfactory in many cases where it has been given a thorough trial, because it not only enables the buttermaker to work with a product which is of better quality through more frequent delivery, but it also assures him a more staple article.

#### Truck Enters as New Factor.

"In this operation of cream route the motor truck has appeared as a factor not to be lightly treated by any creamery.

"From an experimental stage the trucks have now come to be regarded as an important source of economy, and their use on cream routes is spreading over the country with almost marvelous rapidity.

"Both initial cost and the cost of operation have ceased to be big arguments against the operation of the motor trucks, for, with the advantages which they possess over the team in the rapidity and amount of ground which they can cover taken into consideration, they have proved, in the long run, to be actually cheaper in a great many cases than the team and wagon.

"The lack of good roads, as a reason why the motor should not be used, is also disappearing, not only because of the increased efficiency of the newer designs, but also because of the movement toward securing better roads which has spread over the country. While many creameries use their trucks practically the year round, in other states, particularly in communities near the Canadian line, good roads will be an important factor in the number of days which the trucks can be used during the year.

#### Tests Prove Value of New Method.

"The Creamery Journal reproduces figures to prove that the cost of operation of a truck is surprisingly low. The results were secured by a prominent truck manufacturing concern in trials over average country roads with several fairly steep hills on part of the course. While the roads were dry at the time of the trial they were decidedly rough in many places and were, on the whole, in about as poor condition as would be found on almost any cream route.

"No attempt was made to compare the cost of operating a motor truck with that of maintaining a team, because of the fact that the cost of feed, as well as the initial cost of the horses, will vary greatly in different parts of the country. In answer to inquiries, however, most of the local creameries operating trucks on cream routes declared that they were entirely satisfied."

## The BIG BULL Tractor



You see them everywhere. Last year WE told you what the Big Bull COULD DO. This year YOUR neighbors will tell you what the Big Bull HAS DONE for them, and is still doing. Ask us for their names.

\$645.00

F. O. B.  
Minneapolis

Plows 8 to 9 acres  
in a ten-hour day.  
Self-steering in plow-  
ing. Subsoils furrow.

More Bull Tractors  
have been sold to farm-  
ers than all other makes  
combined.

The Big Bull will  
pull a 24-inch sep-  
arator fully equipped.

20-H. P. on the  
belt. Will run a 7-  
in. centrifugal pump.

Write Dept. A-13 for the  
monthly Bull Tractor  
Bulletin.

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## FARM CURED MEATS

Better—Cheaper

Use your Parcels Post privileges

Also \$2.50 book on curing meats free with each \$10 order.  
W. H. KAUFMAN, Bellingham, Wn., R. F. D. No. 2

## GINSING \$8000 to \$20000 per acre at maturity

IF YOU HAVE SOIL AND LOCATION

Demand is good for good roots. I am booking orders now for seed and plants. Five miles of beds open to inspection.

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# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., AUGUST, 1916

No. 8

## SUMMER FEEDING.

Figuring one cow per acre on land valued at \$150 it has been determined that on a basis of 6 per cent interest on the investment the cost is 6 cents per day for pasturing a cow, or \$9 for 5 months. Whether or not it pays to pasture must be determined by each individual farmer, based on his location, his cropping plan, his help and the capacity of his cows. On cheap lands there is no feed plan better than abundant pasturage. As land increases in value, pasturing becomes more expensive and when the feed cost, including grain, exceeds 20 cents a day, a plan for more stall feeding and less pasturing may be advisable. In the Coast Section winter cropping with the vetch-wheat product for silage a low price feed is provided for the months of July, August and September in connection with any pasture that may be available.

This crop, or corn may also be grown during summer for silage to feed the following winter season. In the Coast Section pasturing is usually good during spring and fall and with care, a little pasturing can be done on each of many days and yet obtain a silage or a hay crop. It pays to put the ground in good condition for a crop, then seed abundantly, bearing in mind that the legumes including clover, peas, vetch, grow well under our cool humid conditions, while at the same time enriching the soil and therefor will always be the basis for the cheap feed crop, whether grown exclusively or in connection with others.

The earlier the seeding can be done in the Coast Section, after September first, the better, for the cheaper can the next summer's feed crop be provided.

## COOPERATION.

Reasons for failure of cooperative associations in the United States are: lack of leadership; individualism; "get rich quick" spirit of the people; false promotion; overexpansion; poor accounting and auditing, and lack of education in cooperative management.

Cooperation along such lines as manufacturing and production seem to thrive; but in most cases, it seems as though mercantile associations are very apt to be disappointing; but every cooperative association is an individual proposition, and must depend upon itself for success or failure. The "cooperative exchange" is, perhaps, the only practical farmer's purchasing agency at the present time. Minimum overhead expense, cash on delivery, large purchases on the budget plan, no expensive "frills," and immediate and full package delivery are essential factors in successful cooperative purchasing.

## STATE COW COMPETITION.

The numerous cow testing associations now in operation in the States of Washington and Oregon are in excellent working order as a rule, and much practical information is gained by the individual members from the system. Under the work of good testers and county agents dairymen are practically absorbing information of value which they will put into practice. Between the different associations there is virtually state competition. At the close of the year it will be interesting to compare notes and ascertain which locality has the grade or the pure bred cows that average the highest in production and in net profit margin. At the present time the Puyallup Valley, the Montesano and the Walla Walla Associations are all at high mark averages, but the Enumclaw, the Lewis County or the Clallam Associations may yet surpass any of them. The Enumclaw dairymen never brag much, but they are always springing surprises, such as capturing coveted prizes at the fairs and commanding premiums over the regular market prices for their dairy products. By another year the competition will be still keener, for members in each of the several associations are after pure bred sires of their chosen breed, good and strong. There is no obstacle to this kind of dairy progress as exemplified by a banker at Duvall, Washington, who offers to loan money at 4 per cent for the purchase of registered sires of high merit. In fact, it is difficult for any dairyman to dodge the willing accomodation of a good local banker when a member of a

cow testing association with a fixed purpose to weed out unprofitable cows, to give common sense care to the stock and to the provision for balanced feed rations at minimum cost. Hundreds of dairymen in the Pacific Northwest, each with a will

and a purpose, will soon have their bankers write a paper for them to sign, covering the purchase price of a sire, a silo or other necessary material and there will be very strong "state cow competition" by another year or two.

## Holstein Sire Johanna McKinley Segis

The illustration shows the Holstein sire Johanna McKinley Segis, whose dam has a record of 40 pounds butter in seven days. His sire is the famous King Segis and is valued by eastern Holstein breeders at \$25,000. He has been brought to the Coast by Mr. E. A. Stuart, president of the Carnation Stock Farm, at Tolt, who is deeply interested in getting the best of the Holstein families on the Pacific Coast, thus helping to make it easy for dairy farmers who desire to improve their herds to secure young stock at reasonable prices, thereby getting a larger quantity of milk and a higher quality than heretofore, and without taking a chance on their pedigree and health.

Arrangement has also been made to ensure the health of the large registered herd at this farm under the supervision of the Bureau of Annual Inspection, U. S. Department of Agriculture, and all animals showing any traces of disease are removed.

This animal represents ideal dairy form of male of this breed from a side view. He is well proportioned in length and depth of body and limbs with good head and back showing strong nerve force.

With animals of this class breeders are getting well up to the top line of possible production and the extreme high value is based on the fact that there are but few of such phenomenal producers in existence. It is the reward of persistent painstaking efforts and care in the breeding the selection and the feeding. In the entire dairy industry the reward for thoroughness, cleanliness, good judgment and initiative are very pronounced, because the difference between a cow of large production and a star boarder represents the difference between a large measure of profit, and a loss, as does also the difference between a clean dairy product and one badly flavored.

Fortunate are the dairymen of the Pacific Northwest to have animals of this class brought to the Coast, where we have a natural dairy environment unequalled elsewhere in the world. Opportunities to produce a large number of these high class animals on the part of breeders and a good living profit on the part of dairymen are within reach of all who undertake this line of industry seriously. It is only a question of choice, push and time.





# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

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man, Wash.

The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

## RURAL CREDITS LAW.

The rural credits law will now be  
tried out. Some of its good features  
are: It is a beginning for the ren-  
dering of needed help to the farmer,  
a low interest rate is to be establishd,  
and it will be an education for the  
farmer to evolve plans to finance  
himself. The undesirable features are  
that it is rather too expensive in its  
operation, and that it does not recog-  
nize character credit, does not provide  
help for the young man who has just  
finished an agricultural training and  
is ready to start on the making of a  
farm home for himself.

However, the character credit fea-  
ture will grow as people become more  
ready for it, as young men are in  
position to assume a definite amount  
of responsibility. The commercial  
banks are now likely to give more  
attention to character credit for rural  
development. Under the present law,  
when a loan is made at a commercial  
bank, to pay for an item to be used  
for "agricultural purposes," the paper  
can be written for 6 months and turn-  
ed over to a Federal Reserve Bank  
for discount and at the end of that  
time may be renewed. This affords  
an opportunity to obtain cash cover-  
ing a crop period and will help in  
the purchase of needed live stock.

When there is some evidence of  
integrity thoroughness and thrift,  
character credit will not be difficult  
to establish. In a new country it  
always takes some time to get thru  
with the kind of experiments which  
financiers necessarily must avoid.

## FEEDING AND WEEDING.

That correct feeding plans with  
feed amply provided has much to do  
with the total capacity production  
of cows is verified by the experience  
at the Walla Walla Cow Testing As-  
sociation. When the first month's  
test was made last November 18  
per cent of the cows in the associa-  
tion did not pay for their keep. The  
figures for July show that only 4 per  
cent of those being milked did not  
pay for their feed. Better feeding  
plans had been adopted and a con-  
siderable number that were "guessed"  
to be profitable cows were found  
wanting and weeded out. The aver-

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

age production for the penitentiary  
herd per cow for July was 1217 lbs.  
milk and 43.1 lbs. butterfat, indicat-  
ing good selection, breeding and feed-  
ing. Members of the Walla Walla  
Association are so well pleased with  
results for general improvement in  
dairying that reorganization is al-  
ready being made to begin the second  
testing year on November 1st.

## THE FAIRS.

More people will attend the fairs  
held in the different coast states this  
year than usual because there is an  
eager desire to see the types of the  
animals which produce the largest  
marketable values, to observe which  
is the latest and most adaptable  
machinery for minimizing farm labor  
and to enjoy needed social recreation  
and fun. The outlook for the farmer  
on this coast is improving. As a rule,  
the crops are good and market fair.  
Shoulder to shoulder we must all  
push hard for a satisfactory mer-  
chant marine which will solve the  
market problem. Talk it over at the  
fairs and don't forget to vote.

## BALANCED RATIONS.

As dairy cows in the Pacific North-  
west become greater yielders, the  
value of a balanced ration is more  
apparent.

In this section it is easier to pro-  
vide the necessary protein on the  
farms than in most any other known  
dairy country. In the irrigated dis-  
tricts dairymen are inclined to bank  
a little too much on alfalfa alone,  
while in the Coast Section there is  
a tendency to depend too much on  
clover, vetch, peas and oats. These  
crops are all rich in protein and  
would be a cheaper feed when a  
little more grain, rich in fat and  
starch, is grown on the farm in con-  
nection. Therefore some of the most  
successful dairymen are now grow-  
ing more wheat and corn to be fed  
together with the crops naturally  
rich in protein.

## MORE SHEEP.

A shortage of wool and mutton ex-  
ists which is not likely to be relieved  
in many years, therefore, those who  
own flocks of sheep should observe  
every precaution to keep them in  
good breeding condition, providing  
ample feed and shelter for the reward  
in handsome profits to be made is  
certain. When domestic animals are  
in an under fed condition, especially  
during the breeding season, repro-  
duction will fall below normal. Place  
the breeding flocks in a succulent  
pasture and feed a little grain oats  
and bran, one-half to one pound per  
day at this period. At the same time  
guard against over fat. As the farms  
are becoming sub-divided, more at-  
tention should be given to the small  
flocks of sheep. By fencing with wire  
and sub-dividing certain fields, sheep  
can be handled from one part to  
another without injury to crops and  
with some measure of safety from  
being destroyed. They transform  
many weeds and much waste material  
of the various farm crops into wool  
and mutton, to be sold in the markets  
at handsome figures. In fact, sheep  
under proper management and care  
can be made the highest profit pro-  
ducers among the domestic animals  
on the farm.

## FOREST TREE EXPERIMENTS

The Agricultural Experiment Sta-  
tion at Pullman, Washington, is pre-

paring to carry on extension work in  
experimenting with forest tree plant-  
ing among the farmers of the eastern  
part of the state.

A limited number of trees will be  
placed with certain farmers in each  
of a number of communities to de-  
termine the class and varieties best  
adapted to the different localities and  
for specific purposes in view.

Nurserymen who have given some  
attention to forest tree plantings on  
the uplands and in arid districts will  
confer a favor by giving the benefit  
of their observations to Frank G.  
Miller, Head Department of Forestry,  
Pullman, Washington. It is the plan  
of this service to cooperate with  
nurserymen and farmers for more  
extensive and substantial work in  
forest and ornamental tree planting  
in Eastern Washington.

## ROAD MATERIALS.

Mr. C. E. Thorpe, of Seattle, advo-  
cates the use of more wooden block  
pavement as road material, both  
from an economical and general util-  
ity standpoint. In the State of Wash-  
ington, he estimated an invested  
capital of 200 million dollars in  
vehicles, including autos and horses.  
The wear and depreciation on this  
material is far greater on the stone  
or cement paved roads than on  
wooden blocks.

We have the timber for the blocks  
while money must be sent away for  
asphalt. The wooden blocks should  
be treated with a preservative and  
we have plenty of tannic acid if we  
do not use creosote for the purpose.  
A large proportion of the millions of  
stumps remaining on logged-of land  
might as well be made into paving,  
blocks as to be burnt up in smoke.  
The best and most economical kind  
of a road is a problem to which im-  
mediate attention should be given  
for its correct solution means a sav-  
ing of money and energy.

## CONTROLLING SALES.

Dairymen Organizing to Sell Con-  
certedly.

The first step to control the sale  
of their dairy products by the dairy  
farmers is the organization effected  
at Everett recently with W. H. Tier-  
ney, Silvana, President, and Frank  
Field, Snohomish, Secretary. The ob-  
ject is concerted action on the part  
of the leading creameries of the  
Pacific Northwest, first to establish  
a basis whereby a fixed quality and  
quantity of butter can be delivered on  
immediate notice and second united  
action for the sale of the output  
and the development of further mar-  
kets. This is positively necessary  
when other markets than local are  
to be reached and the need of this  
is felt by dairymen themselves who  
are now making the right start. The  
first essential is the adoption of a  
system, in which the leading cream-  
eries can unite and then to strictly  
adhere to its provisions.

Considerable time will be required  
to perfect a working organization of  
this kind, but its initiative has come  
from the right source the farmers  
themselves. When a large quantity  
of butter—ton lots of a fixed, high  
quality is available for prompt ship-  
ment, then there is a sound basis on  
which foreign markets can be devel-  
oped. General cooperation on the  
part of the leading butter manufac-  
turing concerns, is necessary for

success, and there is no question of  
the need and its ultimate success.

## VETCH-WHEAT IN ABUN- DANCE.

H. P. Smith, County Agriculturist  
for Okanogan County, Okanogan,  
Washington, writes that some of the  
farmers there are growing wheat and  
vetch in combination as a forage  
crop, with excellent results. A good  
many farmers are becoming inter-  
ested in silage and both corn and  
the wheat-vetch combination crop  
are being grown for the purpose.  
Late rains spoiled considerable hay  
and more silos will go up next year  
to save all the forage crop.

## WESTERN WASHINGTON FAIR.

The Western Washington Seven-  
teenth Annual Fair will be held at  
Puyallup September 12 to 17th, in-  
clusive. Secretary J. P. Nevins has  
sent out a premium list, which is a  
hummer, and the detail preparations  
for exhibits is very thorough. The  
fair will be brimfull to overflowing  
with the best types of live stock.  
Attractive horticultural displays, the  
most beautiful in flowers, very com-  
plete agricultural exhibits of grains  
and grasses, good display of machin-  
ery and the usual very large poultry  
show. This fair is a very unique  
educational institution and the atten-  
dance is always large. Those who are  
preparing to enter for prizes should  
lose no time to make application to  
Secretary Nevins.

## GOOD SILO CROPS.

By C. C. Cushman.

As an example of good silo crops  
in Southwest Washington Mr. D. W.  
McKay, near Oakville, put up a Wey-  
erhaeuser silo, 10x30 feet, with a  
capacity of 60 tons, at a cost of \$167.  
The lower half of this silo is filled  
with vetch and oats, half and half,  
and the top half is filled with oats  
and Canadian white peas, which has  
proved to be the best pea grown in  
this valley, being a splendid yielder.  
The seven acre crop on this place  
averaged 10 tons per acre, and two  
teams and ten men filled the silo in  
less than 4 days. There are several  
farmers in this vicinity who have  
tried out the silo method of preserv-  
ing their forage crop last year with  
very satisfactory results. The vetch-  
wheat combination will be tried out  
by some in this part of the state with  
the seeding done in the early fall.  
This the farmers figure will make  
more nearly a balanced ration as the  
vetch is rich in protein and the wheat  
contains more starch and fat than  
oats, thus providing these necessary  
elements without the need of buying  
so much grain or concentrates to  
balance the ration. The oat, hay and  
pasture crops are abundant, plenty  
of rain.

## HERBERT RASPBERRY.

The Herbert Red Raspberry is sug-  
gested for experiment as a commer-  
cial cropper. It is said to be better  
flavored and larger than the Cuthbert,  
but a little softer. For juice purposes  
it might yield a larger volume. It  
is likely that the delicious rasp-  
berry juice will go on the market  
in condensed form in the near future,  
either as "raspberry vinegar" or rasp-  
berry cider and hold a place along  
side the now famous loganberry  
juice.



**FURROWING FOR BLASTING OUT DITCHES.**

The action of the gasses of proper explosive in the ground, when used for the purpose of making ditches, can be compared to the action of a mold-board plow, or of a sled in deep snow.

Comparing the action to the plow, I have found that the gasses tend to dodge here and there, so to speak, if they are not properly supported. You know how it is when you have plowed all of a land except a strip half again as wide as a furrow. The plow will turn over two-thirds of the width of this, or three-fourths, till the landside runs too close to opposite edge. Then the plow slides out of the land entirely, over to the landside edge.

This is exactly what happens when the gasses come in contact with a big sod, or a stone or a bunch of hard earth and are not supported by something equally firm and solid. They shove this way and that, always, like the plow, taking the line of least resistance.

As compared with a sled in snow, you know how a sled will skid down hill-sideways when it is on a grade in snow. If a front runner strikes a big stone or bump, the sled is thrown sideways and it is the snow that gives, not the stone.

In blasting out a ditch the idea, of course, is to excavate the earth in a straight line. In order to insure this, experience has shown that it is well to make the line of the ditch the line of least resistance by plowing a furrow, or two furrows, where the ditch is to go. This is particularly desirable where there is heavy sod. When the explosions occur, the gasses force the lower earth out right on the line of this furrow, and there is no tendency to gouge out twists or bowls. The two furrows can be used to advantage in sod that is likely to hang together and fold back over the edge, or even fall back into the ditch, instead of tearing loose and flying away. Make them as far apart as you want the ditch to be. The explosive will then throw out the material, sod and all that is in the strip between the furrows. If the ground is too brushy, too swampy or furrows can not be made for any other reason, it would be as well to cut the sod or ground with a shovel on one or two lines.

**BUTTON CLOVER.**

Button clover is as yet little known on the Pacific Coast. It produces more seed than bur clover and has no spines on the pod.

According to the U. S. Department of Agriculture Bulletin 730, it will do well in the Coast Section and is particularly desirable for sheep, and for pasturage for other stock.

Button clover can be easily established in pastures, for nothing more is necessary than to scatter the seed in the most favorable places. The working of the soil prior to sowing will perhaps aid in establishing a stand, but except on good land this will hardly be profitable. Ordinarily the most profitable practice is to sow the seed broadcast and allow it to compete with other pasture plants. Where the winters are mild, the clover should be sown in the fall, and if there are summer rains the seeding should be done about the first of September. In California, also, and the other Pacific Coast states where bur clover is common, inoculation is not necessary for the new crop. Mixing soil from an old field of bur clover with button clover seed is one of the easiest methods of securing inoculation. Only enough soil to dust the seed is necessary.

**FAIR DATES.**

Southwest Washington Fair, Chehalis, August 28-September 2, G. R. Walker, Secretary.

Spokane Interstate Fair, Spokane, September 4-9, R. Insinger, Secretary.

Grays Harbor Fair, Elma, September 6-10, J. B. Kirkaldie, Secretary.

Thurston County Fair, Olympia, September 11-12-13.

Hay Palace Fair, Mabton, September 12-16, T. W. Howell, Secretary.

Western Washington Fair, Puyallup, September 12-17, J. P. Nevins, Sec.

Walla Walla County Fair, Walla Walla, September 12-17, Robt. Johnson, Secretary.

Washington State Fair, North Yakima, September 18-23, Frank Meredith, Secretary.

Mason County Fair, Shelton, September 19-23, M. F. Knight, Secretary.

N. W. Land Products Exposition, Seattle, October 4-14, D. D. Olds, Secretary.

Skagit County Fair, Burlington, October 2-7, S. M. Butler, Secretary.

Clallam County Fair, Port Angeles, October 12-14, Frank C. Teck, Secretary.

Oregon State Fair, Salem, Oregon, September 25-30, A. H. Lea, Sec.

Montana State Fair, Helena, Montana, September 25-30, P. B. Nelson, Secretary.

**TWO SILAGE CROPS.**

Wheat for Winter Cropping—Corn Grown in Summer at Kennewick.

The plan of growing two silage crops a year on the same ground has been demonstrated to be entirely practical here. This plan is to sow fall wheat as soon as the corn is off, cut the wheat and put it in the silo the following spring, then plow the same ground and put it into corn immediately. This affords wheat silage for summer and corn silage for winter feeding. Of course, in order to do this repeatedly, the ground would have to be heavily manured, but any farm that has sufficient stock to eat two crops of silage will produce plenty of manure to grow the crops.

There will be about 170 silos filled in this county this year, as compared with 7 in the fall of 1912. There are still a number more silos being built, and many other farmers are considering building them, but are unable to put one up this year.

The following men have good silo crops this year: At Richland, Wash.: T. J. Chalcraft, F. A. Friermood, Harry Hartung, Sam Ross, Martin Wenanga; at Finley, Wash.: Henry Lampke, August Huss; at Kennewick, Wn.: Olie Brew, C. E. Cox, Ed Selleck, C. Puterbaugh; at Prosser, Wn., among those who have good silos are: C. E. DeBowe, Frank Jackson, H. M. French, Done Bunn, E. F. Benson, Geo. Finn, F. M. Ray.

There are many others with equally good crops in each of the districts. In fact, nearly all the silo owners in the Prosser district are growing fine yields of corn silage this year.—L. M. LAMPSON, County Agricultural Agent.

**WATCH THE COOLING SYSTEM.**

"Some cooling systems are so closely proportioned that the stoppage of the fan, or sediment in the water jackets or radiator will cause the engine to overheat and the water in the radiator to boil," says Mechanical Bulletin No. 3, entitled "Engine Overheating," just issued by the Standard Oil Company.

"Care should be taken to see that the hose used for radiator connections has not rotted and small particles of rubber has not gotten into the cooling system, also that the formation of scale and sediment in the water jackets is not so serious as to impair radiation.

"A very effective method of removing sediment and particles of foreign matter from the cooling system is to fill the radiator with boiling water, in which from three to five

**ORNAMENTAL PLANTS**

of the very choicest selections at reasonable prices. Flowering shrubs, evergreens, roses and hardy perennials, well shaped stock. Submit your planting needs for design.

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USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.

pounds of salsoda has been dissolved. Allow this solution to stand in the radiator and water jackets for twenty-four hours, after which it should be drained off and the system thoroughly flushed out with clean water. If this is done once a month or at least every 2000 miles, it will keep the radiator and water jackets in very efficient condition.

The fan should always be kept in an efficient condition, care being taken to see that the belt is not slipping and that the blades have not straightened out, as in this case the fan will not draw sufficient air through the radiator to insure proper cooling.

"Not less than seven per cent of the power developed by the cylinders is lost in overcoming the friction of the piston, and it is, therefore, necessary that the cooling medium be kept at its highest point of efficiency to enable the lubricating oil to perform its duty. Experience has proved that oil made from Western asphalt-base crude maintains its lubricating efficiency at cylinder heat better than oils made from other crudes, thus aiding materially in keeping the motor at the proper operating temperature."

**JERSEY EFFICIENCY.**

E. L. Brewer, Satsop, Washington, having been appointed field man by the A. J. C. C., is making an appeal to breeders of Jersey cattle and to any having grades who has some conception of the merits of this breed, to get in line for better work. He urges the exhibition at the fairs, attendance for close observation and to become a member of the Washington Jersey Cattle Club. There is much detail information and many facts of value which can only be obtained by co-operative efforts. Those interested will write Mr. Brewer.

**FRUIT MOVEMENTS.**

Up to August 7th 8598 cars of peaches have been marketed in the United States, of potatoes, this year's crop, 34,349 cars have been sold, and 10,701 cars tomatoes are marketed. Everything possible is being done to expedite the marketing of the pear, prune and apple crops. The government is rendering efficient service in the way of information as to condition and capacity of the different markets.

**BUTTER CONDENSED MILK AND CHEESE.**

The output of butter in the United States in 1914 had a value of over 223 million dollars, condensed milk over 59 million dollars and cheese over 50 million dollars, showing the comparison as to the amount and importance from a market standpoint. In the State of Washington the condensed milk product has a much larger proportion. The Coast Section is eminently fitted for the production of condensed milk.

**POULTRY POINTERS.**

Poultry and egg markets are very good. Dairymen and fruit growers are realizing the advantage of keeping poultry in connection with their leading activities. Give the fowls a deserved share of attention, providing before hand for the fall and winter feeding and shelter. Give them ample protection from the rains and feed some grain in connection with the greens and other by-products which they naturally have. Plan to make the work of caring for them in a sanitary manner, easy and do it regularly. Where egg production is an important item poultrymen in the Pacific Northwest are using the air burning lanterns evening and morning to lengthen the feeding time during the winter days to about 14 hours instead of eight to nine hours. Demonstrations show this makes a big difference in egg production during the season when prices are highest. Feed liberally to get through the moult of hens and to keep the pullets at their best.

Mr. H. B. Watson, Chehalis, Wash., has started a pure bred Guernsey herd. His sire is a prize winner and has high record backing. This is a valuable acquisition to the pure bred and the dairy industry of Lewis County.

C. W. Holmes, Superintendent Carnation Stock Farm, at Tolt, Wash., is busy with 70 men clearing up additional acreage for their large Holstein Dairy Herd of 400 head. They employ two cow testers, select and breed only for high record production of milk and butter fat.

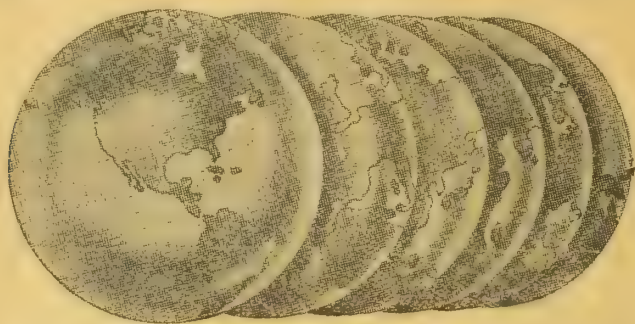


### THE WILLOWMOOR AYR-SHIRE.

A recent visit by a representative of this paper to the Willowmoor Farms, at Redmond, Washington, owned by Mr. J. W. Clise, found the herd in a most excellent condition. From the pure breeders standpoint, the entire plant is ideal, consisting of about 400 acres land, between 250 and 300 pure bred Ayrshire cattle, commodious, well lighted sanitary barns, four large silos, beautiful home buildings and grounds and carefully kept production and breeding records.

This famous herd has six world's records, made for production, each covering a period of one or five years.

SIX  
WORLD  
RECORDS



ON  
WILLOW  
MOOR  
FARMS

(1) 1910-11—Netherhall Brownie 9th. Mature record 18,110 lbs. milk, 820.91 lbs. butter fat.

(2) 1911-12—Southwick Woodbine. Senior four-year-old record 12,995 lbs. milk, 468.42 lbs. butter fat.

(3) 1911-12—Gerranton Dora 2nd. Mature record 21,025 lbs. milk, 804.70 lbs. butter fat.

(4) 1912-13 — Lily of Willowmoor. Mature record 22,106 lbs. milk, 888.70 lbs. butter fat, 22,596 lbs. milk, 955.56 lbs. butter fat (last record).

(5) 1914-15—Lily of Willowmoor. Record for five year 84,891 lbs. milk, 3,362.05 lbs. butter fat.

(6) 1915-16—Willowmoor Etta 3rd. Junior two-year-old record 16,621 lbs. milk, 666.06 lbs. butter.

This world famed herd has produced a sire whose dam and granddam on sire's side are unsurpassed in production, viz. Lily of Willowmoor, and Gerranton Dora 2nd, a combination of the Peter Pan and Robin Hood strains. This young sire "Ben Hur" is likely to produce some phenomenal milking daughters.

The demand for heifers and cows from all parts of the United States and the Orient is greater than supply and there is a wide and growing market for young sires. Among the recent sales the following are among buyers. A. P. Stockwell, Montesano, H. E. Scholz, Mento; J. J. Landy, Curtland; J. W. Callahan, Mt. Vernon; N. G. Gorrie, Acme; J. R. Pearson, Hazel; L. M. Loveless, Cheney; B. Dennis, Republic; B. W. Stafford, Roy; all in Washington, and G. P. Curtiss, Sheds, Oregon, also to the State College Station, Manhattan, Kansas; E. Reirson, Troy, Idaho; G. R. Wilson, El Monto, Calif., 5 heifers and bull to University, Wyoming, and to the Hawaiian Islands and to H. W. Holding, Chili, China. Most of these bought sires, while others took small herds.

On this farm most of the roughage is raised in the form of clover and timothy and oats. The oat crop this year is 200 acres and will yield heavily. Mr. Clise tried a feeding experiment with oat straw and one pound grain per day for each of 60 youngsters, and found excellent results. From this time on the Willowmoor Farm will preserve the oat

straw as carefully as hay for feeding purposes and feed it with the one pound grain mixture in the daily ration. This develops body and the Ayrshires are endowed with great digestive and assimilating powers, thus having the essential pure bred qualities firmly fixed in their constitution.

In the grain mixture is a little proteina.

The silos are filled with corn silage, which produces excellent results. The variety grown is Golden Glow, a yellow dent planted in May and cut for silage in October. This farm affords abundant pasture throughout the spring, summer and fall months. Where a summer soiling or silage

crop is required Mr. Clise is of the opinion that the wheat vetch combination would provide a satisfactory feed and well balanced ration.

As a working herd for the dairy the Ayrshires are practically demonstrating their high profit value on this farm. There are many points of interest and value to the average dairyman who will visit this farm, where helpful information is cheerfully given.

### VETCH-WHEAT COMBINATION CROP.

From numerous reports by farmers, and observations made in the Coast Section, it is evident that wheat and vetch in combination will be a leading crop, to be grown for dairy feed. On the upland soils the seeding will be made as early in the fall as the ground can be put in shape and following the rains in September. On the valley soils sowing will be made a little later, as a rule, but the object of early seeding is to get a good growth started while the soil temperature is favorable. Vetch has been sown with rye and oats with more or less satisfactory results, but the wheat-vetch combination has several advantages. First, wheat is a better winter season grower than oats, and second, it contains more carbohydrate and starch than either oats or rye. As the vetch is rich in protein, combined with wheat it forms more nearly a balanced ration for dairy cows. Again, if it comes on too fast in the spring it will stand pasturing back better than oats. In order to get the full benefit of the fall, winter and spring growing season, the early fall seeding becomes necessary and with this practice there is a crop ready either for the silo or for soiling, or both, by the last of May. The ground can then be made ready for corn or for some second crop to be harvested late in the fall. The wheat-vetch is also a good crop sown in the spring, but more forage is obtained by taking advantage of the fall seeding, winter cropping method. Both vetch and wheat naturally do well under growing conditions of low temperature.

On Whidby Island fall sown wheat has yielded over 100 bushels per

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acre. There are numerous records in Lewis County and in other parts of the Coast Section, of 75 bushels per acre. In combination with the vetch commonly grown here, the tonnage would not only be large but the protein contained in the vetch and the starch and fat in the wheat together with the roughage in the straw, makes the ideal feed required, a home product for good milk flow. In Eastern Washington, wheat alone has been proven to make choice silage. In some localities the dairymen are more dependent on it in this form than on corn, but the wheat crop is much improved for feed when grown in combination with vetch.

In the Coast Section the yields of vetch and wheat are much increased by the use of ground limestone. A

considerable number of dairy farmers whose experience in providing feed during the past year have been rather costly will sow the wheat-vetch combination in September for making silage next May and a number of them will also make a spring seeding of this combination crop for silage to be used during the following winter. Without the silo the waste of the hay crop was enormous among farmers the present summer. From now on many will have learned from nearly bought experience to grow the crops which produces the nearest approach to a balanced ration and to put it into the silo. There will be an abundance of clover, peas, oats grown and in favorable localities, corn alfalfa, but the acreage of the wheat-vetch combination crop will be greatly increased.

## Ground Limestone

Proper Method of Improving Soils in Western Washington and Western Oregon.—By Henry Bucey

Lime is the preferred base of all commercial fertilizers, and if applied to soils deficient in lime they are wasted.

In the New England states many hundred thousands of acres of farm land have been agriculturally abandoned in the past 30 years. The owners considered such land exhausted or "wore-out," for the reason that they would not produce when the various commercial fertilizers were applied.

But the soil chemists have examined these soils and find they are depleted of lime. They have informed the owners that if they would first apply calcium carbonate, which is ground limestone, to such soils, at the rate of from 3 to 5 tons per acre, that their land would soon become highly productive and wherever tried it has proven to be true.

Potash applied to a soil depleted of lime will form a base with the silicates of the soil and are locked up and not available for plant food. Phosphate applied to such soil, not finding any lime, will form a base with iron and aluminum and become a rock, and lost as plant food.

Any nitrogen fertilizer placed upon land depleted of lime is wholly wasted as lime is the only agent that will fix nitrogen in the soil. Nitrogen is the most elusive substance that can be applied to any soil that does not contain lime. You will readily understand this when informed that the only process known of extracting or taking nitrogen from the air is thru the agency of lime, which process have been patented in Norway and Germany. Nitrogen comprises four-fifths of the common air we breathe. But nature has fixed laws concerning its disposition for the use of vegetation, and we must learn to avail ourselves of the use of this great element that sustains plant and animal life. In the Illinois experiment station circular No. 181, issued in April, 1915, by Cyril Hopkins, chief in Agronomy and chemistry, the writer forcefully brings out the fact that the productiveness of the soil cannot be maintained by the use of commercial fertilizers, without first applying ground lime very liberally.

For Illinois soils he recommends from 2 to 5 tons per acre.

Limestone ameliorates soils by destroying its acidity, makes the soil porous for aeration and for the passing of water through it. Lime forms the proper base of such fertilizer, and combines with them in the production of vegetable growth, without which vegetation would cease.

Many of the farmers of the state that have applied lime to their land have done it, so sparingly that no good results have been obtained.

If not enough lime is used to correct acid of the soil the lime will not produce the desired effect, no more than the partially extinguished fire would save your house.

Mr. Hopkins is a great advocate of the use of phosphate on soils, as well as ground limestone. The writer admits the value of phosphate as applied to the soil as a fertilizer element of same. But in the study of the origin or source of such element, it appears the most mysterious of all other fertilizing substance. He has observed that where there is plenty of lime in the soil, there is not required additional phosphate for the growth and maturity of plants and their seed.

Phosphate of lime is a tribasic compound composed of sodium, magnesium and fluoride of calcium. Three-fourths of bone is composed of such substance, and ground bone is rich in phosphate. This phosphate is found in the limestone formation in Tennessee and some other southern states and a great source of revenue. Mr. Hopkins, in his circular, mentioned on page 20, amongst other things state "It should be noted too, that ground limestone, especially when applied liberally, tends to convert some of the natural soil phosphate of iron and aluminum into more easily available phosphate of calcium, thus reducing the immediate need for applying phosphate."

Hilgard, on soils, on page 354, among other things, states: "For in general we find that a lower percentage of potash, phosphoric acid and nitrogen are adequate when a large proportion of lime carbonate is present. This has already been referred to, in connection with the tables of

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soils of low percentage, given above." Then on page 355 is this: "But as stated on the previous page, a higher per cent of lime carbonate (ground limestone) may offset a smaller percentage of phosphoric acid by bringing about a greater availability. It is the writer's belief that with a liberal application of ground limestone to the soils of this state, that the phosphate fertilizer can be dispensed with.

Within the year the farmers of Washington and Oregon have made

considerable use of ground limestone to the soil, and no adverse reports have come back, and if any comes it will be from those that have not use it liberally enough to connect the acidity of their soil, which, as before stated, if not done, would not produce favorable result. One of the leading dairymen of the state, who has used about a car load of ground limestone, informs the writer that he has ordered 400 ton for September delivery and many others who have made trial of a few tons will order



by car load lots in the future. It will be exceedingly fortunate for the husbandry of the state if at their early stage of development of the farming industry, that they now begin to use lime upon their soils which the Eastern farmer neglected to do, to their great loss for a period of over 50 years.

The liming of the soil is very inexpensive when compared to the benefits produced as one sufficient liming will last from 7 to 10 years. Farmers in many of the eastern states considered limestone districts, have found that the limestone was so hard and impure that the stone did not dissolve and disintegrate fast enough to supply the constant cropping of their land. They are now grinding such limestone and spreading it upon their soils.

#### SEALING THE SILO.

Editor Northwest Horticulturist and Dairyman:—In your last issue is an article on this subject that gives some valuable facts on how to prevent the spoiling of the silage on top. There is another way in which the spoiling of silage can be effected, even better than those mentioned. When silage filling stops take a few sacks of bran or shorts and mix with water, forming a wet mash. Spread this on top of the silage about two inches thick. This will form a cake that will absolutely exclude the air and prevent the spoiling of any silage.

If one wishes to fill on top later

### Financing the Farmers

System for Lending Money at Reasonable Interest Has Been Established.

The "Rural Credits Law," was signed by President Wilson on July 17th, 1916.

Two very helpful features to the farming industry are observable in this law. The first is the low interest rate which is very essential for the farmers who are starting with limited means and undertake to pay out while clothing and educating their families.

The second beneficial feature is the basis which is laid for staple farm securities. Organizations under this law can be so perfected as to make their papers which are sold to lenders of money very attractive at the low interest rate which will prevail.

The individual borrower must put up reliable and sufficient security and he must be efficient in his methods to benefit by this new law. It is only in the wider interpretation of his securities and the decreased cost of using money that this law is helpful to the individual farmer. In this act two farm-mortgage systems are provided: (1) a system operating through regional banks and (2) a system operating through joint stock land banks.

These two systems are to be under the general supervision of a Federal Farm Loan Board in the Treasury Department composed of the Secretary of the Treasury and four members appointed by the President.

#### Federal Land Banks.

Under this system Federal Land Banks make loans exclusively through local national farm loan associations composed of borrowers. These associations become share holders in the banks and in that way members who

leave the covering undisturbed and when feeding the silage feed bran and all without removing the bran from the silage.

Another matter that may be well to know for those who for any reason are not able to bring their silage corn to the proper stage of development before it must be cut. If the stock is too sappy cut some straw or dry hay with the corn as it passes through the ensilage cutter. This will absorb the surplus moisture and will provide a sweet silage instead of a sour silage, as otherwise will be the result.—C. J. ZINTHEO, Seattle.

#### GOVERNMENT ROAD FUNDS.

An apportionment of five million dollars has been made by the U. S. government for federal road funds to the several states of which Washington obtains \$71,884.28, Oregon \$78,687.37 and Idaho \$60,463.50. This is to be expended within the year ending June 30, 1917. A total of sixty million dollars will be appropriated during the next four years. It is now up to our state colleges to produce efficient road engineers. If this money is wisely expended in conjunction with state and local road funds the highways will be a credit to the country. The coming 25 years should be an era of public roads and merchant marine development. Honesty and efficiency will determine measure of progress that will develop.

are borrowers will share in the profits of the bank.

The money for loans is to come partly from the capital of the banks and partly from the sale by the banks of bonds secured by first mortgages on farm lands, interest rate not to exceed 6 per cent per annum.

There are to be 12 farm-loan districts and a Federal land bank with a subscribed capital stock of not less than \$750,000, each share \$5, shall be established in each district. Each Federal land bank may establish branches in its district. Within 30 days after the capital stock is offered for sale it may be purchased at par by anyone. Thereafter, the stock remaining unsold shall be bought by the Secretary of the Treasury for the United States. It is provided, however, that the Government shall not receive any dividends on its stock. Ultimately, it is intended that all the stock in the banks shall be owned by the associations of borrowers, and provision therefore is made in the law for transferring the original stock at par to these associations.

#### Farm-Loan Associations.

The act provides for the creation of local national farm-loan associations through which it is contemplated that the Federal land banks shall make their loans. In the event that a local loan association is not formed in any locality within a year, the Federal Farm Loan Board may authorize a Federal land bank to make loans on farm land through approved agents Ten or more persons who own and cultivate farm land qualified as security for a mortgage loan under the act, or who are about to own and cultivate such land, may form such an association, provided the aggregate of

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the loans desired by the membership is not less than \$20,000. Each member must take stock in his association to an amount equivalent to 5 per cent of the amount he wishes to borrow.

#### How Loans Are Obtained

A member of a national farm loan association, before obtaining a loan, must first fill out an application blank supplied to the loan association by the Federal Farm Loan Board. This application blank and other necessary papers will then be referred to a loan committee of the association which must appraise the property offered as security. Such application as is approved by the loan committee is then forwarded to the Federal land bank and must be investigated and reported on by a salaried appraiser of the bank before the loan is granted. This appraiser is required to investigate the solvency and character of the prospective borrower as well as the value of his land. When a loan is granted the amount is forwarded to the borrower through the loan association.

#### Conditions for Loans.

The act specifically defines the purposes for which loans may be obtained. These are:

(a) To provide for the purchase of land for agricultural uses.

(b) To provide for the purchase of equipment, fertilizers, and live stock necessary for the proper and reasonable operation of the mortgaged farm; the term "equipment" to be defined by the Federal Farm Loan Board.

(c) To provide buildings and for the improvement of farm lands; the terms "improvement" to be defined by the Federal Farm Loan Board.

(d) To liquidate indebtedness of the owner of the land mortgaged, existing at the time of the organization of the first national farm loan association established in or for the county in which the land mortgaged is situated, or indebtedness subsequently incurred for one of the purposes mentioned in this section.

Loans may be made only on first mortgages on farm land.

Only those who own and cultivate farm land or are about to own and cultivate such land are entitled to borrow.

No one can borrow save for the purposes stated in the act, and those who after borrowing do not use the money for the purposes specified in the mortgage are liable to have their loans reduced or recalled. The secretary-treasurer of each association is required to report any diversion of borrowed money from the purposes stated in the mortgages.

No individual can borrow more than \$10,000 or less than \$100.

No loan may be made for more than 50 per cent of the value of the land mortgaged and 20 per cent of the value of the permanent insured improvement upon it.

The loan must run for not less than 5 and not more than 40 years.

Every mortgage must provide for the repayment of the loan under an amortization plan by means of a fixed number of annual or semi-annual installments sufficient to meet all interest and pay off the debt by the end of the term of the loan.

#### Enlargement, Tax Exemption.

After a Federal land bank has loaned on first mortgage \$50,000, it can obtain permission from the Farm

Loan Board to issue \$50,000 in farm bonds based on these mortgages, sell such bonds in the open market, and use the money thus obtained to lend on other mortgages.

This process of lending on mortgages and selling bonds in issues of \$50,000 may be repeated until bonds to the amount of twenty times the bank's paid-up capital are outstanding. If each bank should have only its required minimum paid up capital of \$750,000, this plan will provide eventually, if all the authorized bonds of the 12 banks are sold, over \$180,000,000 to lend on first mortgages on farm land. The banks, however, can increase their capital stock above the required minimum and so increase the amount of bonds they can sell, and thus increase the total amount of money available for loans on farm mortgages.

To make these bonds attractive to investors, the bonds, together with the mortgages upon which they are based, are exempted from Federal, State, municipal, and local taxation and are made legal investments for judiciary and trust funds. The capital stock of the Federal land banks is also exempt from taxation. Federal reserve banks and member banks of that system are empowered to buy and sell these bonds. They are to be issued in denominations of \$20, \$50, \$100, \$500, and \$1,000.

#### Joint-Stock Land Banks.

In addition to the system of 12 Federal land banks and the national farm loan associations of borrowers, the act permits the establishment of joint-stock land banks and authorizes them to carry on the business of lending directly to borrowers on farm mortgage security and issuing farm loan bonds. These banks must have a capital of not less than \$250,000. They are under the supervision of the Federal Farm Loan Board, but the Government does not lend them any financial assistance.

The joint-stock land bank is free from many of the conditions imposed on the Federal land banks. Subject to the 50 and 20 per cent value limitation and the limitation as to territory, the joint-stock land bank may lend more than \$10,000 to a single individual, and it is not restricted to making loans for the purposes specified in the case of the Federal land bank.

The joint-stock bank, like the Federal land bank, can not charge an interest rate on farm mortgages in excess of 6 per cent, nor shall such interest rate exceed by more than 1 per cent the rate of interest paid by the bank upon its last issue of bonds. A joint-stock bank is limited in its bond issue to 15 times its capital and surplus.

Among the restrictions placed on these banks under the act are (1) that their mortgages must provide for an amortization system of repayment such as is prescribed in the case of loans through the Federal land banks, and (2) that they shall in no case demand or receive under any form or pretense any commission or charge not specifically authorized by the act and approved by the Farm Loan Board.

The bonds of the joint-stock land banks are exempted from taxation. Their capital stock, however, is not exempted.

#### General Provisions.

The law, through the Farm Loan

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## IRRIGATION

**Adequate, available moisture during growing seasons.**

### IRRIGATION WATER PER ACRE.

Under conditions, such as prevail in Idaho, on a normal project with medium clay loam, irrigated land should be supplied with sufficient water during the season to enable each irrigated acre to retain 2 feet, according to a recent investigation of the U. S. Department of Agriculture. This applies, it is said, to at least 75 per cent of the irrigation projects. In order that the land may retain the needed 2 feet of water per acre, the former should receive about 2½ feet on medium clay and sandy loam soils. When the soil is porous or has a porous subsoil lying closer to the surface than 6 feet, more than this quantity of water should be delivered to the consumer, the exact quantity depending, of course, upon the porosity of the soil. Where an Idaho project is devoted one-half to grain and the other half to alfalfa or other crops, the total volume of water should be distributed something as follows: 18.7 per cent during May, 28 per cent during June, 52.8 per cent during July, 17.2 per cent during August, and 2 per cent during the first half of September. After this time the only demand for water is for live stock and domestic purposes.

These conclusions, which are based upon cooperative experiments conducted by the U. S. Department of Agriculture and the State Land Board reported in a new Professional Paper, No. 339, of the U. S. Department of Agriculture, entitled "Experiments on the Economic Use of Irrigation Water in Idaho," by Don H. Bark. During the course of this investigation the water was measured upon 529 individual tracts, covering a total area of slightly over 3,600 acres. The land was used for staple crops, alfalfa, clover pasture, spring and winter grains, potatoes and orchards.

Experiments show that the yield of grain on the heavier soils, such as clay, clay loam, sandy loam and fine sand, will normally increase with the supply of water until an amount varying between 1.4 and 1.8 acre feet has been supplied. After this the application of more water will decrease the yield of grain and in many cases the yield of straw as well. Alfalfa requires larger quantities of water and the experiments did not reach a point at which an increased supply began to lessen the yield. If the yield alone is considered it is difficult, it is said, to apply too much water to alfalfa, provided no more is applied at one time than the soil will promptly absorb. With both grain and alfalfa however, the amount of water that it is profitable, from a business point of view, to use depends upon the relative cost of land and of water and other local economic conditions.

With potatoes, it is found that there

is a strong tendency for the yield to increase with the supply of water. The rate of increase, however, grew smaller as the quantity of water was increased, and on clay loam soils it probably will not be advisable to apply more than 2 or 2½ feet per acre to the crop.

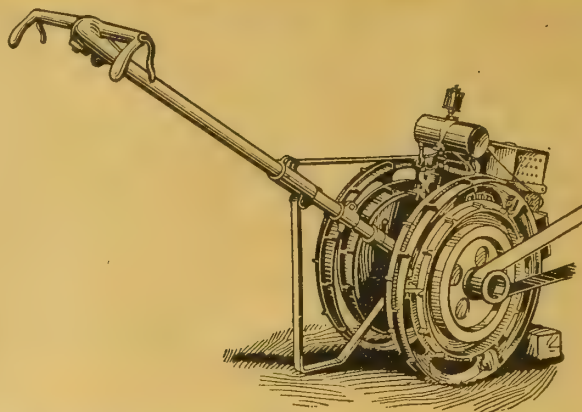
The report also deals with the question of the proper quantity of water to apply at each irrigation. An unavoidable loss from evaporation invariably occurs during and immediately after irrigation and it is, therefore, desirable to have no more application during the season than are required to maintain the needed moisture content in the soil. Investigators found that from 3 to 6 acre inches at one application is the correct quantity. Impervious soils should be so manipulated that they will absorb the smaller amount at least, while on the porous soils large irrigation heads should be used. On these porous soils very little can be accomplished with small heads of water because the water is absorbed so rapidly that it can not be forced over the field.

### VALUE OF WATER FOR CROPS.

The coast section of the Pacific Northwest has had more than the average amount of rainfall during June and July, which is the season for good crop growth and as a result the pastures are in excellent condition up to August first. But how quickly does the ground become dry under a hot August sun. Those who can irrigate this month will greatly increase the yield either of a second grass crop or corn or any other product used for forage. There is a great advantage in having water to apply when the temperature is high enough to produce good rapid growth. In fact, it is during July and August when with the aid of water that the big yields can be made. Those who have installed rams or pumps or any other kind of system for irrigating, west of the Cascade range, are getting excellent results from their investments.

With a generous application of ground limestone, the seeding of the legumes, such as clovers, vetches, peas or alfalfa and abundant moisture during warm weather, the soils which are being cropped will grow richer in fertility year by year, because the legumes are the nitrogen gathering plants. As moisture constitutes the greatest weight of any growing plants it is the most important element to be kept under proper control. Lands which will not retain moisture are valueless for crops, but they become valuable in proportion as moisture can be made available when it is needed to make the best plant growth. The value of water for crops can hardly be over estimated.

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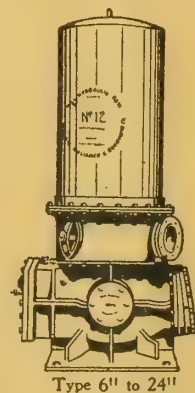
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## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. FORRESTER

## THE WILL AND THE WAY.

There's something I'd have you remember, boys,  
To help in the battle of life;  
'Twill give you strength in time of need,  
And help in the hour of strife;  
Whenever there's something that should be done,  
Don't be faint hearted and say,  
"What's the use to try?" Remember, then,  
That where there's a will there's a way.

There's many a failure for those who win;  
But though at first they fail;  
Then try again, and the honest heart  
Is sure at last to prevail,  
Though the hill is rugged and hard to climb  
You can win the heights, I say,  
If you make up your mind to reach the top;  
For where there's a will there's a way.

The men who stand at the top are those  
Who never could bear defeat;  
Their failures only make them strong  
For the work they had to meet.  
The will to do and the will to dare  
Is what we want to-day  
What has been done can be done again,  
For where there's a will there's a way—From the Reflector.

## SETTING THE TABLE.

The table should be covered with a silence cloth. Spread the table cloth on smoothly. A cover is the place at the table for each person and should consist of a plate, napkin, water glass, knives, forks and spoons necessary for the meal. Each cover should be at least 20 inches in length and 15 inches in depth. Place knives at right of plate, one inch from edge of table, cutting edge turned toward the plate. Arrange in order in which they are to be used, the first used being farthest from the plate. Place spoons, bowls upward, next to knives, one inch from edge of table, in order used. Tines of forks should be turned up. Silver for the course may be laid just before the course is served, if it is more convenient to do so. Chairs should be placed up to the table but not under it to disarrange the cloth.—Juliet Lita Bane, Home Economics

Department, State College of Washington.

## TO MAKE GOOD JELLY.

The canning club specialists of the States Relations Service for the Northern and Western States recommend that the following points be observed to make certain that jelly will be of good quality:

After the fruit has been boiled and the texture broken down it should be poured into a jelly bag and permitted to drain for a considerable time. Forcing the juice from the pulp will cause cloudy jelly. When the juice has been collected, place two teaspoonfuls of cold unsweetened fruit juice in two teaspoonfuls of grain alcohol and mix by shaking gently. Allow it to settle for one-half hour, preferably in a glass tumbler. If a jellylike substance collects in the bottom of the mixture it is evidence that pectin is present and the juice is suitable for jelly making. When the test shows absence of pectin, the white portion of orange peel, apples, or green citron melon may be added to the juice to supply the necessary pectin. Twelve ounces of sugar to a pint of juice will make a jelly of the proper firmness and texture. Jelly is ready to be poured into glasses when two rows of drops form on the end of a paddle or on the edge of a spoon held sidewise.

## CANNING WITHOUT SUGAR.

By J. S. Caldwell, By-Products Specialist, Experiment Station, Pullman, Wash.

As a consequence of the rapid rise in cost of sugar, many housewives who usually prepare their own canned fruits, preserves, jams and jellies are permitting cheap and abundant crops of fruit to go to waste rather than purchase the sugar necessary to preserve it by their usual methods. Wherever this is the case, winter supplies of canned fruits must be purchased later at a cost greater than that of home production, or the diet of the family must be restricted with danger of injury to health. Many housewives are apparently unaware that practically all fruits may be successfully canned without the use of sugar. Such fruit preserves more of the natural appearance and flavor than does fruit put up in heavy sugar syrup, is fully as palatable and much more easily digested, is in better condition for use in cooking, and is available for all purposes for which fruit canned in syrup could be used. A heavy sugar syrup aids in a slight degree in preventing the growth of the yeasts and bacteria which cause spoilage, but perfect sterilization makes its use unnecessary.

Fruits may be canned without the use of sugar by any method which the housewife is accustomed to use, but in every case the following rules should be observed:

1. Fruit to be used for canning should be firm, not over-ripe, and free from decay. Vegetables should be young and tender. To attempt to use very dirty, over-ripe or de-

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lighter, flakier  
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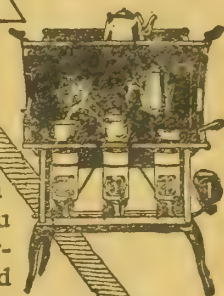


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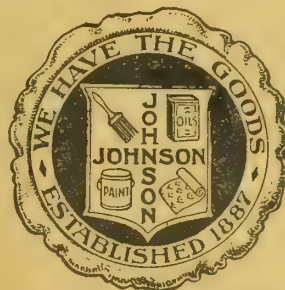
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BAKING POWDER  
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cayed fruit, or old, tough vegetables is to invite failure, since it is very difficult to sterilize such materials.

2. Jars should be tested by partially filling with water, adjusting rubbers, tightening covers, inverting and shaking.

3. Jars, covers, rubbers, spoons, cups, funnel, and all utensils which are used in canning must be placed in a pan of cold water deep enough to cover them, placed on the stove and boiled for 20 minutes. Allow them to remain in the hot water until needed for use. This will prevent subsequent breakage and will insure perfect sterilization.

4. Rubbers should never be used a second time.

5. The neck of the jar should never be wiped off before sealing, as the cloth will almost certainly leave bacteria or yeasts in the jar. **Canning Without Sugar by the Cold Pack Method.**

The cold pack method has rapidly come into general favor, since it preserves more of the natural color, appearance, and flavor of the fruit, and also saves the time, energy and labor of the operator. It requires no special equipment other than a wash-boiler, lard-can, or other deep vessel with flat bottom and tightly fitting cover. Make a false bottom of wire netting or light wooden slats, nailed to cross pieces and cut to fit into the bottom of the vessel used. If an oil or gasoline stove is available, increase the comfort of the operator by moving the entire outfit into a shady spot outside the house. Place the pan of boiling water containing jars, covers, and utensils on the stove and keep hot. Put the false bottom in place in the washboiler, fill the boiler about one-fourth full of warm—not hot—water, and you are ready to begin work.

Transfer a jar from the boiling water to the washboiler, fill it immediately with cold, raw fruit, packing it down firmly. Add enough cold water to fill the jar within one-half inch of top, using a knife or spoon to displace air-bubbles. Take a rubber from the boiling water and fit it on, then set the cover loosely in place. Continue the process until the boiler is filled with jars. Now fill the boiler with cold water to within 1½ inches of the tops of the jars, fit the boiler cover tightly on, place the boiler on the stove, and heat to boiling. In the case of quart jars, the following time table may be used as a guide:

For berries, continue boiling vigorously 8 to 12 minutes. For apples, peaches, or pears, boil vigorously for 20 to 35 minutes, the time depending upon the variety and degree of ripeness of the fruit.

When the fruit has boiled for the specified time, remove the jars from the boiler and immediately screw the covers tightly on. Wipe dry and place on a shelf out of drafts, to cool, inverting the jars in order that leaks may be detected at once.

#### Canning Vegetables.

**Tomatoes**—Grade for size, ripeness, and color. Scald in hot water enough to loosen skins. Plunge quickly in cold water. Remove. Core and skin. Fill container with whole tomatoes only. Add one level teaspoonful of salt to each quart. Place rubber and cap in position. Partially seal, but not tight. (Cap and tip tin cans.) Sterilize 22 minutes in hot-water bath outfit; 18 minutes in water-seal out-

fit; 15 minutes in steam-pressure outfit under 5 pounds steam; 10 minutes in aluminum pressure cooker under 20 pounds steam. Remove jars. Tighten covers. Invert to cool and test joints. Wrap jars in paper, and store.

**Sweet Corn Cut from Cob**—Can the same day as picked. Remove husks and silks. Blanch on the cob in boiling-hot water 5 to 15 minutes. Plunge quickly in cold water. Cut the corn from the cob with a thin, sharp-bladed knife. Pack corn in jar tightly until full. Add one level teaspoonful of salt to each quart and sufficient hot water to fill. Place rubber and top in position. Seal partially, but not tight. (Cap and tip tin cans.) Sterilize 180 minutes in hot-water bath outfit; 90 minutes in water-seal outfit; 60 minutes in steam-pressure outfit under 5 pounds of steam; 35 minutes in aluminum pressure cooker under 20 pounds of steam. Remove jars. Tighten covers. Invert to cool and test joints. Wrap with paper, and store.

**Lima Beans, String Beans, peas, Okra, etc.**—Can same day vegetables are picked. Cull, string and grade. Blanch in boiling-hot water for 2 to 5 minutes. Remove and plunge quickly in cold water. Pack in container until full. Add boiling-hot water to fill crevices. Add one level teaspoonful of salt to each quart. Place rubbers and tops in position. Partially seal, but not tight. (Cap and tip tin cans.) Sterilize in hot-water bath outfit one period of 120 minutes; 90 minutes in water-seal outfit; 60 minutes in steam-pressure outfit under 5 pounds steam; 40 minutes in aluminum pressure cooker under 20 pounds of steam. Remove jars. Tighten covers and invert to cool. Wrap jars in paper, and store.

#### SCHOOL CREDIT FOR FARM TASKS.

The idea that certain practical work done by boys and girls on the farm should count as credits in the agricultural courses of the rural elementary and high schools is growing rapidly in popularity among educators. The basis for this idea is the belief that the farm may and should become the logical laboratory for testing out and putting into practice much that is taught in the schools, and that the schools by giving credit for home work can and should encourage boys and girls to make profits for themselves or to become more directly helpful to their families. Educators, however, find some difficulty in defining just what work that the boy does on the farm should receive an educational credit and how many credits should be allotted for the different kinds of work which really help the boy to master progressive methods.

To assist the superintendents of schools and teachers, the specialists in Agricultural Education in the States Relations Service have recently published U. S. Department of Agriculture Bulletin 385, School Credit for Home Practice in Agriculture. This bulletin which may be had free by educators as long as the Department's supply lasts, devotes a number of pages to tables and examples showing the nature of school credit projects, and the amount of credit to be granted. It is recognized, however, that real cooperation on the part of the parent is essential and the author thus defines the part the

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Makes Satisfied Cows; Increases the Flow of Milk.

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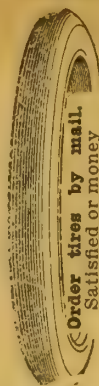
parent must play in any plan for making school and farm work closer together in the interests of agricultural education:

The parent should agree: (1) To permit the pupil to use specified land, animals, and equipment, either as a temporary owner or as a tenant so far as the needs of the project are concerned; (2) to grant the pupil the time needed for the work and to verify and vouch for the time record; (3) to instruct the pupil in the necessary manipulation so far as practicable; (4) to allow the pupil the profits derived from his own labor and management. The last point is not always feasible, particularly where the pupil takes up one phase of the main business of the farm, such as the weighing and testing of milk for a dairy herd.

The parent must at least give an unbiased voucher of the time and expense record, and a statement that the project work was all done by the pupil. In the absence of an advisory committee or an inspector, the parent is the judge as to when the pupil has accomplished a task successfully.

Where the pupil's time is much needed by the parent in regular home duties it may be well to advise

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**Write Us Today.**—If not interested, perhaps you know some energetic, intelligent man now unemployed.

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Largest between the Rockies and Cascades.

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FRUIT TREES  
SMALL FRUITS  
ORNAMENTALS

Growers are now planting small fruits, to supply the market for fruit juices made from the different berries, also the large fruits to supply the demand for dried apples and pears. We have the choice logan, raspberry and blackberry plants, also the trees of the varieties for dried fruit purposes, offered at very reasonable prices.

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We need more room in our nurseries for spring planting.

All stock clean, healthy and thrifty. Grown on virgin soil two years from sage brush.

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that the pupil take over some part of that home work as a project. This will insure the cooperation of the parents, although the "managerial" income may not come to the pupil.

The school should not only give credit for work for which the pupil receives pay, but should consider the relative income or profit a some im-

portant factor in determining the school rank given on the project.

To insure success, it will be very desirable to have a memorandum of agreement signed by all parties before the project begins; a report in full from the pupil, and a voucher from the parent at the end.

## DAIRY DEPARTMENT

**Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.**

### FACTS SECURED BY MEANS OF COW-TEST RECORDS.

The reports from ten associations, according to W. A. Barr, of the O. A. C., in Oregon, that have completed one to four years work reveal these facts: Three to six cows in herds of fourteen to twenty cows are entirely unprofitable; in the average herd of twenty cows the five best cows return three to four times the net profit that the five poorest cows return; and in herds of sixteen or less cows the percentage of unprofitable cows is higher than in herds of twenty-five to forty cows. This last statement, which all of our associations show to be true, should mean a great deal to the average dairyman, for it is he that has the average size herd and who feels that while dairying is his principal line of work, yet he is not justified in buying a silo; in paying even the small sum of \$1.25 to know whether a cow is any good or not; in taking any good dairy literature; in using a pure bred dairy bull and it is he that will say that he knows his cows because he has only a small herd and can watch the amount of milk in the pail and by the color of it tell how good it is. These men are constantly pulling downward on the banner of more profitable dairying in all its phases and for their own personal good and because of their practices and the influences of such should change their methods or get out and stay out of dairying. Twelve of such men were called upon in one day very recently and requested to join a cow testing association being effected in their community, and briefly here is their method of operating. Seven were using grade Shorthorn bulls, 2 pure bred Shorthorn bulls as their dairy sires. One each was using an Angus, a Hereford and a grade Jersey. One of the twelve had a silo under construction. Two had milk houses. Only one could see any possible value of a cow testing association, the remainder all expected to sell out, as "there is no money in dairying."

#### What Cow Tests Reveal.

Does the average dairyman need the services of a cow testing association? Eight hundred dairymen who constitute the membership of the associations in the states of Washington and Oregon say "YES." And further say that their own mistake has been in not sooner joining an organization or having begun systematic records on their own herd at the time that they began dairying and not have milked an unknown herd for an indefinite period.

The need of the services of a cow testing association is admitted by every man who answers "No" to the following questions. Do you know what

the production in either pounds of milk or butter fat amounts to in a year's time for the individual cows in your herd? Do you know what the feed costs per cow amount to? Do you know whether or not you are feeding the most economical and productive ration that you might feed? Do you attempt in any measure to balance your feeding ration? Do you know whether the production of your herd today is greater than six, eight, or ten years ago? Have you any realization of how much the net profits of your herd would be increased if the five lowest producing cows were replaced by just two good cows? A man who is a member of a cow testing association is one of a group of twenty-five to thirty fellow dairymen who are cooperating to employ a man who gives all of his time to obtaining and posting the records of milk production, test of the milk, amount and value of butter fat, the amount and value of the feed consumed and the profit and loss for each cow in the cow testing association in which he is employed. One day of each month is spent with each member and these records for this one day taken and the month's totals arrived at, multiplying the figures for this one day by the thirty, allowing fifteen days preceding and fifteen days following the day of test so the day for test falls in the middle of the monthly period covered, thus eliminating to a great degree the possibility of error of record on the basis of one day's production. The expenses are borne by the members, paying from \$1.25 to \$1.50 per cow for her year's record.

#### HOME MADE STERILIZER FOR DAIRY UTENSILS.

A simple and efficient homemade steam sterilizer which can be built at a cost not to exceed \$5 to \$10 is described in a new Farmers' Bulletin, No. 748, prepared by the Dairy Division of the U. S. Department of Agriculture, Washington, D. C. This bulletin can be obtained free of charge on application to the Department.

The ordinary washing of dairy utensils, the dairy specialists point out, is not sufficient to insure freedom from bacteria. The only safe method of destroying in utensils germs which affect the hygienic and keeping qualities of milk and cream is by sterilization. Even when dairy utensils appear clean, if they have not been properly sterilized they may harbor vast numbers of bacteria which contaminate milk or cream that comes into contact with them. Live steam at a temperature of at least 205 degrees Fahrenheit is a thoroughly effective agent and one that this home-

## GUERNSEYS

### Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.

### Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

#### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

HERMAN STEFFEN  
MONROE, WASH.

#### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

A. E. SMITH CO., Sumas, Wash.  
(or White Building Seattle)

## Waikiki Farm

Breeders of  
JERSEY and Ayrshire CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

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## Puget Sound Herd Holsteins

Production as well as Individuality  
Home of the World's Record Milch Cow

|                                            | One year<br>Butter. | One year<br>Milk. |
|--------------------------------------------|---------------------|-------------------|
| Lutske Vale Cornucopia .....               | 998.6               | 31,239.2          |
| Gettie De Kol .....                        | 1,082.4             | 23,471.9          |
| Chimacum Wayne Boon 2d, 2-year-old .....   | 882.2               | 21,581.1          |
| Sena De Kol Ononis, 3-year-old .....       | 846.2               | 20,572.9          |
| Forum Quirinus Gold Leaf, 2-year-old ..... | 747.7               | 17,637.7          |

This is a sample of a few of our yearly records. Young stock for sale.

WM. BISHOP,

Chimacum, Washington

## HIGH QUALITY FEEDS

Shorts, middlings, bran. Dairymen should get our prices now per ton or car lots. We also manufacture Hen and Chick Foods. All cereals.

Keystone Cereal Company

2311-17 Jefferson Ave.,

Tacoma, Wash.



made apparatus makes readily available on the average dairy farm.

When placed on a stove or on heater the apparatus in question develops steam in a shallow pan and introduces the live steam through a pipe into milk cans and buckets. In sterilizing separator parts, small articles and strainer cloths, a galvanized iron box is placed over the steam, outlet and used as a sterilizing chamber.

#### BREWER, A. J. C. C. FIELD MAN.

Mr. E. L. Brewer, Satsop, has been appointed field man for the American Jersey Cattle Club for Washington. Mr. Brewer is well known to our many readers as a progressive, wide awake live stock breeder and the A. J. C. C. have made a good selection. Mr. Brewer's efforts are devoted towards the development of a good strong body, large frame for capacity and endurance, and at the same time preserve the ideal dairy type prominently featured in the imported herds. He will be of valuable assistance to the breeders in this state, as well as to the club he represents.

#### ANOTHER WORLD RECORD FOR JUANITA FARM.

Mr. Eldridge's Cow Produces 3133.3 lbs. milk in 30 days.

Juanita Farm, at Chimacum, is well known as the home of world record Holstein-Freisians. Margie Newman, with her 33-lb. butter record and her world milk records first put Juanita Farm on the Holstein map. Now it is her daughters and granddaughters that are keeping it there.

Nena Newman Cornucopia, a granddaughter of the old Margie, is the latest addition to the class of world record cows. As a junior three-year old she has produced 29.5 lbs. butter in seven days and 778.2 lbs. milk. This milk record is considerably higher than the former record in this class, exceeding it by 19.2 lbs. The thirty-day record is no less wonderful, as she averaged over 100 lbs. milk per day; the final accounting showing a total of 3133.3 lbs., which is 41.2 lbs. higher than any other record in the junior three class. There are but two other cows of the same age that have produced over 3000 lbs. of milk in thirty days, and Nena Newman Cornucopia is the first to go above 3100 lbs.

Nena Newman Cornucopia is a sister of Aaggie Nena Cornucopia, the junior two-year-old cow that holds the state butter record with 24 lbs. to her credit. She is noted as being the only junior two-year-old to produce 100 lbs. milk in one day, as well as holding world records for seven and thirty days. It is interesting to know that both of these Holsteins were consistent prize winners on the North Pacific Fair Circuit last year and also at the P. P. I. E. Stock Show at San Francisco.

Mr. Eldridge has crossed the blood of Margie Newman with that of Aaggie Cornucopia Johanna Lad, Jr., justly famous as a show animal and producer, and has developed a family that is wonderfully productive, and at the same time having good showing qualities. Mr. Eldridge has bred raised and developed eight cows with 100-lb. milk records, and five with butter records from 28 to 33 lbs. This we believe has not been equalled by any other breeder in the State

of Washington. A family such as this, that combines the show-ring type with good breeding for production at the pail, is surely hard to beat, and a great pleasure to own.—E. W. WEST, Official Supervisor.

#### WORLD'S RECORD HOLSTEINS AT CHIMACUM.

The Chimacum Valley has made more world's records with her Holstein cows, according to the size of the valley and the number of cows within its borders, than any place in the world.

The first one was made in the year of 1911 by the aged cow Margie Newman, owned by Charles Eldridge. This cow astonished the world by producing 136 lbs. milk in 1 day, 3555.1 lbs. in 30 days.

In the spring of 1915 a grand daughter of Margie Newman, also owned by Chas. Eldridge, she being Aaggie Nena Cornucopia, a junior 2-year-old, broke the world's milk record in this class by giving 105 lbs. in 1 day, 87.1 lbs. in 7 days and 2733.3 in 30 days. Her butter record is 24.06 lbs. in 7 days and 95.03 lbs. in 30 days.

In the early spring of this year Thomas Yarr broke the butter record with a 22-month old heifer, Margie Wayne Boon, a great grand daughter on her sires' side of Margie Newman and on her dam's side a great granddaughter of Chimacum Wayne Boon. This young heifer produced in 7 days 22.22 lbs. butter and 439.7 lbs. milk.

A few days afterwards a senior three-year-old, S. V. H. Molly, owned by Wm. Bishop, broke the world's milk record in the 8 month after calving class by producing 488.4 lbs. in 7 days.

It was then followed up by the great cow Lutscke Vale Cornucopia, owned by Wm. Bishop. This cow on the 11th of May finished her year's record by producing 31,246.9 lbs. milk. She is the only cow in the world to produce over 31,000 lbs. milk in 1 year and the 2d one to make over 30,000 lbs.

The next month the heifer, 3 years six days old, Violet Blossom Artis Cornucopia, broke the world's record for age by producing 115.2 lbs. milk in 1 day and 3025.3 lbs. in 30 days. This heifer's dam is a sister to Lutscke Vale Cornucopia.

This record was held but a few days in this class when another grand daughter of Margie Newman, owned by Chas. Eldridge, Nena Newman Cornucopia, produced 117.6 lbs. milk in 1 day and 3133.3 lbs. in 30 days. Her butter record for 7 days is 29.66 lbs., 30 days 108.9 lbs. These are all world's milk records.

The Puget Sound Herd, owned by Wm. Bishop, has just completed its first year's work of testing in the semi-official work and have finished 17 head of which 6 are 2-year-old heifers, 3 are 3-year-olds and eight cows and the records average for the 17 head: milk 20,562 lbs, butter 826 lbs.

#### PUGET SOUND HERD SALES.

Editor N. W. Horticulturist, Tacoma, Wash.: Since the last sale in Snohomish the 3d and 4th of May we have made a few important sales of a few bulls and heifers.

The most important one is to the Alaska Experiment Station on Kodiak Island, Alaska. Of the 11 months old bull Chimacum Sir Querinus Cornucopia. This young bull as an individual is hard to beat and his

## "DOG DAYS" the best time to buy a DE LAVAL SEPARATOR

THERE was never before as good a time to buy a De Laval Cream Separator as **right now.**

The "Dog Days" are at hand when dairying is most difficult without a separator and when the increase in quantity and improvement in quality of cream and butter are greatest through the use of a good separator.

Then there is the great saving of time and labor, which counts for more in summer than at any other season and often alone saves the cost of the separator, aside from all its other advantages.

This is likewise the season when De Laval superiority counts for most over other separators,—in closer skimming, larger capacity, easier running, easier handling, easier cleaning and absolute sanitation.

A De Laval Cream Separator bought now will easily save its cost before the end of the year, and it may be bought for cash or on such liberal terms as to actually pay for itself.

#### DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

SAN FRANCISCO SEATTLE  
50,000 Branches and Local Agencies the World over.

#### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

##### Prices

For Ten Cows, Size 10x17½ in.

6 Sheets for \$.25, Postpaid  
15 Sheets for \$.50, Postpaid  
25 Sheets for \$.75, Postpaid  
50 Sheets for \$1.25, Postpaid  
100 Sheets for \$2.00, Postpaid

Address

Northwest Horticulturist and Dairyman  
P. O. Box 1604 Tacoma, Wash.

#### GUERNSEY BULL FOR SALE

My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnar 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

M. S. Shipley, Proprietor  
PLATEAU FARM,  
Haller Bldg. Seattle, Wash.

#### JerseyBulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

EDWIN PETTETT  
Dungeness, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

#### DARK FAWN JERSEY BULL CALF

Born October 28, 1915. Dam in Register of Merit with record of 7771 lbs. milk, 494 lbs. 7 oz. butter in year from three teats; sire's dam 598 lbs. buter. Calf is a good individual and backed by good records made under ordinary farm conditions. Price \$75.

David C. Dilworth Buckeye, Wash.

#### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.



Helps you up  
"On High"

# Red Crown

*the Gasoline of Quality*

puts the "hop" into your car, gives you the quick "get-away", and the "pick-up" on the hills. It's because Red Crown is the unmixed, refinery gas, with extra power in every drop. At dealers everywhere and at our SERVICE STATIONS.

**Standard Oil Company**  
(California)



breeding is among the best. He is sired by the well known bull Quirinus Cornucopia, whose first daughters to be tested are making a wonderful showing, the first five to finish their yearly records as 2-year-olds averaged 16,500 lbs. milk and 699 lbs. butter. The sire of Quirinus Cornucopia is Sir Tehee Cornucopia, one of the best sons of the noted bull Aaggie Cornucopia Johanna Lad 102 A. R. O. daughters, his dam is Aaggie Cornucopia Pauline, a world's record for 8 years. The dam of Quirinus Cornucopia is Queen Cantrilla 3d 30.7 lbs. butter in 7 days. She has 5 A. R. O. daughters with good records.

The dam of this young bull is the well known cow Woodcrest Maud, who started her yearly test the 15th of last August at 9 years of age. Soon after freshening she made 26.3 lbs. butter in 7 days, 103 lbs. milk in 1 day in her yearly test, which will soon finish. She will have to her credit over 24,600 lbs. milk and 965 lbs. butter. She is a daughter of the century sire Homestead Girl De Kol Sarcastic Lad 105 A. R. O. daughters and Maud's dam is the good transmitting cow Maud De Kol, 20 lbs. butter in 7 days.

With a bull of this breeding and individuality the Experiment Station made no mistake in selecting him to head their herd, of which they selected from the noted herds of the state.

F. W. Hadley, of Connell, Wash., purchased two bulls over one year old of which both are sons of Quirinus Cornucopia and from well bred dams with very creditable A. R. O. records.

G. W. Bond, of Eugene, Oregon, bought one bull over 1 year old and three yearling heifers for the founda-

tion herd of Holsteins. The bull is sired by the oldest son of Chimacum Wayne Boon, who will soon finish her yearly record of almost 24,000 lbs. milk and 1,100 lbs. butter. Chimacum Wayne Boon is showing her great transmitting qualities by her first son, whose first five tested daughters as 2 year olds averaged almost 21 lbs. butter in 7 days.

The dam of this young bull is a good cow with a 24 lb. record, and she is carrying a large percentage of the blood of Margie Newman.

The heifers are all good individuals with good yearly backing behind them.

Lewis Wilcox, of Gaston, Oregon, purchased the yearling bull, Sir Bracelet Posch. His dam is one of our show herd. She has been exhibited at the fairs and never had a chance to make a good record, but as a 3-year-old in the hot weather she made 20.3 lbs. butter in 7 days and by the looks of her now she will make a much larger record this fall.

The sire of this bull is a son of a 26 lb. senior 2-year-old daughter of a 31 lb. cow. Mr. Wilcox has been using a son of the world's record milk, Lutsche Vale Cornucopia, and got this young bull to use on his daughters.

We also shipped one bull calf 6 months old to China. This calf is sired by Quirinus Cornucopia and his dam is a 16 lb. 2-year-old daughter of Aaggie Cornucopia Newman, who is the sire of more daughters under 3-year-old that has produced over 100 lbs. milk a day than any bull in the world. One of these holds the world's milk record in the junior 2-year-old class for 1, 7 and 30 days. —WM. BISHOP, per John Van Trojen, Jr.

## Lewis County Pure Breeders Club Meet

Very interesting and instructive was the first annual out door meeting of the Lewis County Pure Breeders' Club, held at the Claquato Picnic Grounds, three miles west of Chehalis, on Saturday, August 5th. President N. B. Coffman and Secretary G. R. Walker had the program so well arranged that no changes nor delays occurred from start to finish and the 300 or more persons in attendance all went to their homes with material gain in knowledge of how to improve the live stock and to make more comfortable and beautiful their country homes. The bountiful picnic luncheon covered three very large tables and was in charge of a committee of ladies, with Mrs. J. W. McCutcheon chairman.

The objects and aims of the club, explained by President Coffman, is to create concerted efforts for the kind of pure breeding that will raise the capacity of production among the average dairy herds, and afford means for a satisfactory profit margin from the different kinds of live stock raised upon the farms in Southwestern Washington and thus make farm homes attractive to the naturally healthful boys and girls who are to fill the places of responsibility in the future. All persons interested in the development of pure bred animals are eligible to membership. There are no dues and when expenses are to be met voluntary contributions are received.

Judge E. R. Brady, of Satsop, president Washington Pure Breeders' Association, commended the good work of the club as the foundation for pure breeding development which is necessary for the success of the farming community, and in his opinion the cow is the foundation of prosperity.

The State Association also holds

one meeting in winter and one in summer, the date to be announced.

James Withycombe, Governor of Oregon, who, from his long experience while with the agricultural college and as a farmer, in his interesting address urged the adoption of progressive up-to-date agriculture. The three kinds of husbandry found the world over are: Ownership by the occupant, the tenant and the peasant, the best of which, both for the individual and for the community is ownership by the family on the farm.

Peonage was deplored. No country can attain to the high ideal condition of citizenship where women are compelled to neglect household duties and spend their time in the fields, where men should labor.

As illustration of progressive agriculture the governor cited the country of Denmark, where half a century ago the people, in a pauperous condition, on a cold, unresponsive soil, established agricultural schools, cow testing associations, put out extension workers, organized cooperation dairy clubs, which have developed methods and systems in dairy practice known as the best in the world. Last year the amount of dairy, egg and pork products exported exceeded \$120,000,000. The Coast Section of Washington has many natural advantages for dairying over Denmark, and it is only a question of vision, choice and thrift to develop the country homes whose occupants are to fulfill hopes so far as true patriotism is concerned, for the country inhabitants are the backbone of our civilization.

The first step in progressive dairying is the selection of the pure bred sire. There is no inspiration nor profit in a scrub pig nor a scrub cow. There must be known capacity

## Vetch - Wheat Forage Crop

affords more nutriment for dairy cattle than any other crop indigenous to the coast section. We supply the pure seed of strong vitality, also Gray Winter Oats,



Clover and other grass seeds. Write for catalog and submit your fall seeding requirements early.

**Aabling, Boyce Seed Co.**

89 PIKE ST., SEATTLE, WASH.

## DAIRYMEN !!

**MAKE RESERVATIONS NOW**

For This Season's  
Supply of

**DRIED  
BEET PULP**



The beet sugar factories will soon begin the slicing of this season's beet crop—and that means a new supply of Larrowe's Dried Beet Pulp. While we will have a somewhat larger supply than last year, yet the demand is also larger—in fact, has increased enormously.

Foresighted dealers in nearly every district have already placed orders for shipment—but if you wish to make sure of getting what you require it will be well to see your dealer at once and give him an order for early delivery or state the amount you think you will need during the next few months.

Everything seems to favor the man who is prepared, so we say—"see your dealer now."



—is a succulent, milk-producing, vegetable feed that gives certain and profitable results. Combine it with alfalfa and it makes a wonder ration. It increases the milk flow from 1 to 5 lbs. per day from each cow, and in addition keeps your cattle healthy, sleek-coated and bright-eyed.

Larrowe's Dried Beet Pulp is light, bulky, succulent and easily digested; absorbs water very quickly and swells to about six times its original bulk; is cheaper than bran and other mill feeds, yet produces better results. It is put up in convenient 100-lb. sacks, and may be had either plain or with molasses. Ask for "Larrowe's."

Feeding Booklet Free—Write for it!

"Profitable Feeding" contains valuable information that should be in the hands of every feeder. Sent free on request.

**THE LARROWE MILLING CO.**

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LOS ANGELES, CALIFORNIA

## A Rare Opportunity for High Producing Jerseys

I have decided to offer all of the calves that are born this year from my high producing Register of Merit cows, only excepting Olympia's Fern's offspring. Some of these cows are making over 800 lbs. butter, and others have already done so.

**WHO IS OFFERING HEIFERS FROM 800-POUND COWS?**

Look over the advertisements and then you will have to come here to find them.

**E. L. Brewer**

**Satsop, Wash.**



for production, which can only be ascertained by carefully made tests and records on the part of some one and that is the significance of the value of pure breeding.

#### Why Scrubs Are Not Satisfactory.

In the address by Wm. Bishop, of Chimacum, the renowned Holstein breeder, speaking from experience and observation, he stated that the movement for pure breeding work is general throughout the middle and eastern states and in the Pacific Northwest, is now well started, as indicated, by examples of this gathering. Comparing the different localities in the United States for the development of record producing live stock, Mr. Bishop called attention to the many natural advantages which the people in the Pacific Northwest possesses over those east. Pointing to Judge Brady, he said: I will expect you to make a world's record with your Guernseys. Mr. J. W. Clise, Mr. E. L. Brewer and myself have made world records each of our different breeds. Mr. Clise is a careful and progressive breeder, but his Ayrshires would not stand at the head of this breed the world over without the natural and favorable environments this country affords.

Mr. Brewer and myself claim no special merits as men for the development of pure breeds, but we have put forth our best efforts and because of the humid, mild climate, the pure water, the proteinous feed and green pasture through most of the year, combined with other favorable conditions, we have made world records, known to many of you. During my seventeen years in pure Holstein raising I have made three world records in milk production. The cow Lutscke Cornucopia Vale, my own production, surpassed all previous records with 31,239 pounds milk in 365 days.

Now what is the fundamental difference between a pure bred and a scrub—just one word—digestion. Let me cite you to an experiment carried out by James Hill, the great railroad builder and live stock promoter. On his experiment farm in Minnesota, in order to show farmers how they were losing by not keeping better stock, he bought 2 steers, each of ordinary Mexican range cattle, 2 ordinary grades picked up on a farm, and 2 pure breeds. These were placed in stalls, side by side and all fed alike. After being fed for a period you could remove these cattle from their stalls and without knowing which particular stall each had occupied, plainly tell the place of the Mexicans by the undigested food in the gutter. The pure breeds digested and assimilated the feed, placing it on their backs, gaining 500 per cent in weight while the scrubs ate approximately an equal amount of feed, but it was wasted, indigested. The pure breeds have been developed for generations to digest and assimilate, transforming their feed into either beef or milk and butter fat, while the scrub has a diminished capacity for digestion and therefore is a disappointment for the purpose intended.

As a matter of fact, there are as many scrub farmers as scrub cows. The ordinary farmer will winter his cows on as little feed as possible. I can say that from experience, because I have made the same mistake. When you have an animal with capacity for digestion the feed must

be of the right proportions for its work and abundant to realize any profit. Lutscke Cornucopia Vale took enough food each day for her own bodily maintenance before she produced a ten-gallon can of milk for every day in the year. If your cows don't digest get rid of them the sooner the better and if they do digest for the required milk and butter fat, feed abundantly at whatever cost, or if you have too many sell a part of them.

#### Value of Sires.

It has been said that the sire represents 50 per cent of the herd, but it is my experience that the sire is at least 75 per cent of the herd. In the beginning of my progress as breeder I went east and bought a 2-year-old Holstein bull that cost \$500 besides freight. I didn't dare tell my neighbors the price at that time, but figure for yourselves his value when I tell you that 42 of his daughters will each bring more than the original cost of this sire. Without regard to any great capacity of their mothers his daughters all have great digestive powers and are high record producers.

We are surrounded here in the Pacific Northwest with the proper environment for leadership in dairying compared with any other part of the world, and if we do not make good it is because our privileges are not properly understood and improved.

Speaking for the American Jersey Cattle Club, for which he has recently been appointed field man, Mr. E. L. Brewer, of Satsop, said that more progressive work will be undertaken by the Jersey breeders in this state from this time on. Washington has only 8 Jersey cows whose records show over 600 pounds butter fat a year, but the average is good. He spoke of the valuable work accomplished in Gray's Harbor county through the cow testing association.

After seven month's work the dairymen have a fair idea of the value of their cows. Some are much better than the owners had estimated. The main drawback hindering satisfactory profit margins was improper or insufficient feeding. In other cases there was not the proper digestive capacity and the cows from several herds are being sold. There is a perceptible demand for better sires. Mr. Brewer places much stress on proper feeding, believing that digestion is greatly influenced thereby. While fortunate in getting a good foundation herd for his own breeding and using the greatest possible care in the selection of sires he attributes his high record to a good feeding plan and made the statement that it would be possible, through the mails, to give the farmers of Lewis County help enough in improved feeding to raise the production 100 pounds butter per cow a year.

Secretary Geo. R. Walker spoke of the value of Southwestern Washington Fair, to be held between Chehalis and Centralia August 28 to September 2, as an institution to educate farmers in matters pertaining to pure bred stock, its value to bring buyer and seller together and as a cooperative institution for the general advancement of live stock raising and general farming. The outlook for the fair the present season is most encouraging. Exhibits will be very choice and much interest is being taken.

## Hope Farm Guernsey Calves

**FOR SALE**—Well marked, large Registered bull calves, from dams on official yearly test that will exceed 600 lbs. butter fat. May Rose and Glenwood families. The sire of our herd bull is from a cow with butter fat record of 505 lbs. and sired by a son of Glenwood Boy of Haddon, sire of 26 A. R. cows, from Selma of Pinehurst record 762.88 lbs. butter fat. His dam was first in her class at National Dairy Show and sired by Lord Mar, Grand Champion on the Island and at the National Dairy Show; also sire of 29 advanced registry cows.

H. B. DOUGLAS, Ferndale, Wash.

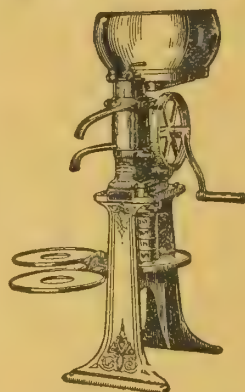
## A Y R S H I R E S

Premier breeder and exhibitor, Panama-Pacific Exposition. This herd holds six world's records for production. We offer you stock which will make you a profit where others fail.

For particulars write

J. W. CLISE, Redmond, Wash.

## ANKER-HOLTH SEPARATOR



Simple  
Durable,  
Self Balancing  
Bowl,  
Perfect Oiling  
System.

We carry a complete line of creamery and dairy supplies and equipment. Ensilage Cutters, Silo Fillers, Gas Engines, Etc.

Write for Catalogue.

Northwest Creamery Supply Company  
306 Second Ave. So., Seattle

## Holstein Bulls, World Records

The dam of my herd bull is Lutscke Vale Cornucopia, the world record milk cow. Young bulls for sale from this breeding.

E. W. McGEARY,  
Friday Harbor, Wash.

## HOLSTEINS

Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

CLOVERIDGE FARM,  
Seghers, Oregon. W. K. Newell.



**BERKSHIRES**  
HEREFORDS-JERSEYS  
BARRED ROCKS  
SILVER BIRCH FARMS  
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## Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor  
Montesano, Wash.

## Only \$2 Down One Year to Pay!

**\$24** Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 35 quarts per hour. Made also in four larger sizes up to 6 1/2 shown here.  
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "Direct from factory" offer. Buy from the manufacturer and save money.  
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STALLS and  
STANCHIONS

Litter and Feed  
Carriers

Strong. Practical, Durable.

Write for special Catalog.

Everything for the Dairy, Cheese  
Factory and Creamery.

Dairy Machinery Co.

907 Western Ave. Seattle, Wash.

## PROTECT YOUR STOCK!! From the Torture of Flies



**CHILD'S SO-BOS-SO**  
TRADE KILFLY MARK  
In Sealed GALLON CANS \$1.25

Cows Give 1/3 More Milk  
—Horses Do More Work  
on Less Feed when Protected by SO-BOS-SO.

Applied in a few seconds at a cost of less than 1/2 cent per day per head.

If you milk more than one cow you need a "NATIONAL" Separator with the marvelous 1 piece skimming device, the "Vortepoon"—Catalog on request.

**PORTLAND SEED COMPANY**  
Portland Oregon

Ask for Catalog No. 56

## HIDES WOOLS - PELTS FURS - TALLOW

HIGHEST CASH PRICES PAID  
PROMPT RETURNS—HONEST  
WEIGHT

WRITE FOR PRICE LIST AND  
SHIPPING TAGS

Hibbard-Stewart Co Inc. Seattle  
Please Mention This Paper



President Coffman, in closing, spoke of four impelling forces working for the development and the betterment of the farming communities in Southwestern Washington. First the county superintendent, whose aims are to give practical training to the growing generations; second, the Fair Association; third, the pure breeders' club, and fourth, one of the banks in Chehalis. (Mr. Coffman was too modest to mention his own bank, but the farmers all realize that the firm of Coffman, Dobson & Co., Bankers, is their true friend. No worthy effort along the development of the rural industry, whether individual or community, that requires encouragement and help, is passed up and good character is given every possible encouragement, particularly where a start is required for the ownership of the right kind of a farm home.) After the stock judging contest conducted by O. E. Gibson, an automobile inspection tour was made by breeders, boys in the judging contests, and visiting friends to the following farms:

Albert Rayton, C. D. Young, Frank Burlingame, A. Wackerbarth, W. S. Gallup, Mrs. M. C. Raschke, Horace Fay, Mrs. Jessie Gregg, Thos. L. Fishback, Henry Tramm, J. B. Blake, J. T. Duncan, Henry Rayton, Geo. J. Nist, J. W. McCutcheon, J. P. Winkler, Don Nicholson, J. A. Scollard, J. T. Alexander, C. A. Giblin and the Grasmere Dairy, at Chehalis, the home of Mr. N. B. Coffman, where light refreshments were served. The inspection tour revealed many productive farms yielding great crops of oats, clover, vetch and wheat, both in special and in combination crops for forage. As a rule, the barns are commodious, well arranged to facilitate the necessary daily routine work, well lighted and in good sanitary condition. Several dairy herds plainly snowed that pure bred sires are being used. In other places the mixture of the dairy cows was too plainly near the low grade. In one instance stock was being bred too young.

In the Grasmere herd of pure bred Jerseys there was evidence of high quality in form, production and breeding being rich in the strains of St. Maves, Stoke Pogis Merry Maiden, Marigold, Brown Bessie Oonan and Gelatine. Some good selections were made at the Burt Pease sale last spring and the young cows, heifers are making good and the herd as a whole average high in production. A few of the cows are likely to exceed the 600 pound mark by another year.

It was the general verdict by all who participated that the first meeting of the Lewis County Pure Breeders' Club was a grand success. The reason for using pure breeds was clearly explained and well understood, and before adjournment eager inquirers wanted to know how to select pure bred sires. Information along this line will be given from time to time through these columns.

#### BEET PULP FEED.

Last season the crop of dried beet pulp was entirely sold out—in fact, for several months past there has not been a pound available. There will be a considerably larger supply this year on account of another large drying plant having been installed at one of the sugar factories that heretofore has not dried its pulp—but, even with this extra supply there is some question as to whether the de-

mand will not exceed the supply before the season is over.

Dried beet pulp is simply the natural root of the sugar beet, shredded clean and pure, with only the sugar and water extracted. Within an hour from the time the sugar beets enter the sugar factory the dried beet pulp is in the sacks, dried and ready to be loaded on the cars. No possibility of its souring, and the drying process is so thorough that the pulp will keep indefinitely for almost any length of time just like grain or any other mill feed.

The great value of dried beet pulp lies in the fact that it meets the vital necessity for a bulky, palatable and succulent feed, and aids the digestion of the entire ration in which it is included because it makes the whole loose and bulky. In the western states dried beet pulp is fed principally with alfalfa, the combination making a balanced ration—but it is also used in combination with many other rations.

"Shall I feed it dry or wet?" is a question that is frequently asked—and it can only be answered by the individual experience of each feeder. It is just as good one way as the other. Let the cows decide. First try feeding it wet—if soaked beforehand the actual amount of water used is immaterial—and probably the cows like it better that way than dry. After they have become accustomed to it gradually switch over to the dry feeding if advisable.

#### How Much to Feed.

Determine by keeping a careful record of each cow. For an average cow of about 1000 pounds weight—giving from 25 to 30 pounds of milk daily—feed about 8 to 10 pounds of pulp (weighed dry) and from 18 to 20 pounds of good alfalfa hay for roughage, or as much hay as the cow will clean up thoroughly. Give the beet pulp first, dividing the amount into two feedings.

As dried beet pulp contains between 65 and 70 per cent of digestible carbohydrates, the ration recommended above would supply approximately 2½ pounds of digestible protein and about 14 pounds of digestible carbohydrates, which is the amount of digestible nutrients required for the average dairy cow.

If alfalfa hay or clover is not at a reasonable price, feed cottonseed meal or some other protein feed with the pulp. It might be wise to displace a pound or two of pulp with an equal amount of grain or mill feed, for the sake of variety. These are points that can best be settled by each feeder.

#### BREAKING HARDPAN WITH EXPLOSIVES.

By A. H. Harris.

The major part of explosives used for subsoiling is in the orchard, either for preparing the ground for setting the new trees or for rejuvenating the old ones which have failed to bear well.

An ammonia grade of 20 per cent dynamite or farm powder is the ideal grade for subsoiling. It will stand more hard knocks, is less sensitive to shock, does not freeze so easily and has a slower lifting force than the higher grades of straight dynamite.

Materials for my own blasting have cost me about 8c per hole. I would not set an orchard without first blasting, even if the cost were three times as great.

Here are some of the advantages to be derived from subsoiling:

1st—It mellowes the earth to a depth of four to five feet and several feet outwards in all directions.

2nd—It creates a porous water-absorbing condition in the subsoil that makes a tree fruit earlier.

3rd—It makes root growth easy and makes tons per acre of new plant foods. Available, heretofore inaccessible, speeding up the growth of the tree and improving the quality and production of fruits.

4th—In old orchards that were planted by the old methods (in spade-dug holes) and have ceased to bear well. It is of great importance in regenerating the old trees by exploding two or three light charges six or eight feet from the base of trees.

## Kill 'Em



Those Pesky Flies with

**LILLY'S**

**FLY LIQUID**

Sold by dealers

**WANTED**—To hear direct from owner of good farm or unimproved land for sale. C. C. BUCKINGHAM, Houston, Texas.

## Cockere's EGGS

Write for prices.

**FRED A. JOHNSON,**

518 35th St.

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Single setting or lots.

Tacoma, Wash.

#### FARM PROPERTIES

Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. **DANIEL MCGREGOR, Berlin Bldg., Tacoma, Wash.** Established over 30 years.

Experience teaches me that it is profitable to subsoil with explosives any kind of soil with an underlying hardpan previous to setting a fruit or shade tree.

Dynamite will never be too high to be profitably used in orchard work, I know by experience.

#### TRACTOR ATTACHMENT.

Nearly a hundred persons among the prominent agriculturists were present recently on the hundred-acre farm of E. E. Gerlinger, near Damascus, Oregon, where the first big demonstration of tractor plowing and harrowing was held.

Sixteen horses drawing three double plows and the Gerlinger tractor attached to three 14-inch plows were all at work at the same time. The tractor moved at three miles an hour, keeping as close to the fence at the end of the field as the horses and turning just as short as the horses. One gallon of gasoline was required to plow an acre. A disk harrow was later attached to the plow and the tractor plowed and harrowed at the same time.

The Gerlinger tractor is a tractor attachment that can be attached to any second hand automobile and they are being manufactured by the Gerlinger Motor Car Company, who have a large factory at Tacoma, Wash.

## STOCKMEN We Cure and Prevent TUBERCULOSIS

**IN CATTLE. DON'T DESTROY YOUR ANIMALS. RESTORE AND PROTECT THEM WITH KAR-NITUM. WRITE US NOW.**  
Kar-Ru Chemical Co., Tacoma, Wash.



To SAVE LITTLE CHICKS and help them to grow into big, strong, healthy birds, FEED

## Diamond Chick Food

Our name and trade mark on every original package.

Beware of Imitations

## POULTRY SUPPLIES

Our 1916 Catalog of "Diamond Quality" POULTRY SUPPLIES, listing everything necessary for the profitable production of poultry

Mailed Free

**Portland Seed Co.**  
Portland, Ore.

Ask for Catalog No. 52

## BLACK LEG LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills, \$1.00 50-dose pkg. Blackleg Pills, \$4.00 Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct. The Cutter Laboratory, Berkeley, California

## Salmon Faverolls

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

**Island Nurseries & Fruit Farm**

S. J. Harmeling & Son,  
Vashon, Wash.

**WANTED**—To hear from owner of good ranch for sale. State cash price and description.

**D. F. BUSH, Minneapolis, Minn.**



Sews Leather Quick

#### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for 1 year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.

#### BUTTER CONTEST.

The creamery operators are preparing to make another butter scoring contest at the State Fair, North Yakima. N. P. Sorenson, Bellingham, president of the association, is earnestly endeavoring to raise the average quality of the creamery output of the Northwest. All creameries are urgently requested to cooperate in this valuable and much needed undertaking.



# WASHINGTON STATE FAIR

NORTH YAKIMA

SEPTEMBER 18-23, 1916

EXHIBITS OF ALL KINDS.

CHILD WELFARE AND CHILDREN'S INDUSTRIAL  
DEPARTMENTS SPECIAL FEATURES.

AUTOMOBILE AND HORSE RACES.

FREE ATTRACTIONS, INCLUDING FIREWORKS.

FERULLO' BAND, OF CHICAGO, ONE OF THE BEST BANDS  
IN THE UNITED STATES, WILL PLAY TWO  
CONCERTS DAILY.

BAUSCHER'S BIG UNITED SHOWS ON THE GROUNDS  
ALL WEEK.

REDUCED RATES ON ALL LINES.

SEND FOR PREMIUM LIST.

Frank Meredith, Secretary.

North Yakima

## Western Washington Fair

September 12th to 17th inclusive at Puyallup

The Educational features will be very strong. Live stock of the different breeds will be of the best types in the Northwest.

Exhibits by both Western and Eastern Washington Experiment Stations will be worth coming a long way to see.

The agricultural, vegetable, fresh and canned fruit and floral displays will be superb.

There will be a picture show, where activities at the different state institutions may be seen. The machinery and the children exhibits will be interesting and the poultry show as usual will be large and of high quality.

There will be pleasing daily musical entertainments and plenty of fun to afford a most enjoyable recreation.

Those who wish to enter exhibits will write for catalog at once.

The popular fair of the Northwest. Attendance always large.

## Western Washington Fair Association

W. H. Paulhamus, President

J. P. Nevins, Secretary  
Puyallup, Washington

## Southwest Washington Fair August 28th to September 2nd

One-half way between Centralia and Chehalis. Forget your troubles, get together with your friends and neighbors, and spend a week of recreation and profit; bring your exhibits, live stock and poultry.

The best half mile track in the State. Late entry Harness Races close August 14, 1916. Running Entries close the evening before the race.

Poultry entries close August 26. All other entries close the evening of August 28. For Premium Lists, Entry Blanks and further information, write

G. R. WALKER, Secretary, Chehalis, Wash.

## GROUND LIMESTONE

is the Great Basic Element for the improvement of the soils of Western Washington and Western Oregon, where the soils are generally deficient in lime. Our finely ground limestone will be applied by farmers and dairymen on their meadows and pasture fields, beginning with September, and for other crops later to suit requirements, as the yield is increased and quality improved economically with ground limestone.

Write for prices per ton and in car load lots of not less than 25 tons.

## Washington Portland Cement Co.

Ground Limestone Dept.

809 White Bldg.,

Seattle, Wash.

## FALL SOWING

In the Coast Section there will be more early fall sowing this year than usual of Vetch-Wheat combination, clovers, and other grass seed to produce the bumper yields for next year. Orders should be placed at once for the early September seeding. Our stock is clean, of highest germinating quality and we ship promptly. Send for our catalog, from which to select for complete seeding and farm machinery equipment.

## Pooles Seed & Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

## Vetch = Wheat = Oats = Rye

A COMPLETE LINE OF  
SEEDS FOR FALL SOWING  
THE BEST QUALITY, LARGE QUANTITY

## Tacoma Implement Company

1521 PACIFIC AVENUE

TACOMA, WASH.

## The High Price of Hay

The high price of hay last spring did not work any hardship on our customers, because they had laid in enough best quality alfalfa hay last fall at \$12 or \$13 a ton, delivered, to last them through the winter.

One dairyman to whom we sold 200 tons of hay was offered \$30 a ton for some of it in the spring.

Take no chances. Determine as soon as you can how much hay you will have to buy for your winter needs, then lay in your supply of best quality alfalfa in car lots before the price begins to advance. Write us for prices.

## Karr Investment Co. No. Yakima Wash.

GROWERS OF APPLES, POTATOES AND HAY



## Use ALBATROSS Cold Water Paint

(White and Fourteen Colors) on your silos, barns and fences, etc. The cost is a fraction that of oil paints. Two coats cover better than 3 coats oil paint. Sold in powdered form, needing only addition of cold water to make ready for use.

Packed in barrels, boxes and 5-lb. cartons.

Color cards sent promptly.

If your dealer cannot supply you, call or write

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# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., SEPTEMBER, 1916

No. 9



First prize herds at the great World's Fair, San Francisco. The upper is Exhibitor's Herd of Guernseys of Chicona Farm, A. L. Gile, Prop., Chinook, Pacific County, Wash. The lower is the noted Puget Sound Herd of Holsteins owned by Wm. Bishop, Chimacum, Wash.

## HELPING TO MARKET.

Uncle Sam will continue to help farmers to solve their marketing problems, and this is especially valuable to the Pacific Coast, where the producers of fruits and live stock are long distances from the great centers of population, and where marketing is always a serious problem.

The office of Markets and Rural Organization receives for the current fiscal year \$872,590.00, an increase of \$338,540.00.

Of the total fund, \$285,000 is appropriated for acquiring and diffusing information on subjects connected with the marketing and distributing of farm and nonmanufactured food products and the purchasing of farm supplies independently and in cooperation with other branches of the department, State agents, purchasing and consuming organizations, and persons engaged in the transportation, marketing and distributing of farm and food products. The sum of \$32,860 is appropriated for studies of cooperation among farmers of the United States in matters of rural credits and other forms of cooperation in rural communities. Part of this amount will be employed in diffusing among the people useful information growing out of these studies. The object is to provide a basis for broader utilization of results secured from the research, experimental and demonstration work of the department, the agricultural colleges, and the State experiment stations.

## Cooperation with States in Marketing Work.

Another new item appropriates \$35,000 "to enable the Secretary of Agriculture to cooperate with the several States in the employment of agents to acquire and diffuse useful information connected with the distribution and marketing of farm products through investigational, demonstrational or extension methods." This work will be carried on in cooperation with certain States which appropriate money for marketing purposes. The agents will maintain headquarters in the various States concerned, and their salaries and expenses will be borne jointly by the Federal Government and the States. They will cooperate with various branches of the agricultural colleges and experiment stations, with State directors of extension, with county agents, and with others, in the collection of data, the distribution of information, the demonstration of methods, and the development of cooperative and other marketing activities.

It is expected that this service will function as a clearing house among the States and between them and the Federal Department of Agriculture for all general and specific information in regard to the marketing of farm products. Through its various State organizations can be utilized in the investigation of local problems, and the results of the work of the Office of Markets and Rural Or-

ganization can be made available to the best advantage.

## Market News on Fruits and Vegetables.

A third new item in the bill calls for \$136,000 "for collecting and distributing by telegraph, mail, and otherwise, timely information on the supply, commercial movement, disposition, and market prices of fruits and vegetables."

Reports on several of the more important fruit and vegetable crops are now being made by telegraph, and it is expected that the same service will be extended to such other crops as the funds may permit. The information obtained so far has been valuable in helping to establish fair f. o. b. prices at shipping points; in so guiding consignors that many unnecessary gluts have been avoided; in enabling shippers to gauge the probable accuracy of returns received, by showing the relative values of offerings from competitive areas; and in furnishing a fair basis for the adjustment of damage claims.

Representatives have been located in most of the larger metropolitan markets and in several important producing areas during crop movement.

Cooperative arrangements have been made with railroads whereby their officials all over the country report car-lot shipments of the crops covered by the service. These reports by railroad officials are filed as night

messages and are received in Washington early in the morning. They state the number of cars shipped during the previous 24 hours, origin of shipment, and original destinations.

Representatives stationed in producing areas report f. o. b. prices. The employees in the city markets telegraph the receipts, prevailing wholesale prices, and market conditions on their respective markets.

At the Washington office this information is tabulated, and daily mail reports are issued to those who have need of this service. Any of this information may also be secured upon request by telegraph, collect. There is no charge whatever for the information.

Representatives at the branch offices do not undertake the sale of any products whatever, nor do they act as intermediaries between distributors and shippers. They are authorized, however, to furnish producers with lists of distributors and to answer inquiries in regard to prices and market conditions. Branch offices are now located in Boston, Buffalo, Chicago, Kansas City, Minneapolis, New York City, Philadelphia, Pittsburgh, and St. Louis. Other cities will be added as the work expands.

The whole-hearted cooperation of the officials of every important railroad handling fruits and vegetables in the country has contributed largely to the success of the work.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,  
Editor and Proprietor.

Address all communications to Box  
1604, Tacoma, Wash.  
(Office 511 Chamber Commerce Bldg.,  
Cor. 9th & C Sts.)

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Payments are due one year in advance.

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## EDITORIAL STAFF CONTRIBUTORS

W. A. Linklater, Supt. Exp. Sta.  
H. L. Blanchard, Poultry and Dairy.  
J. L. Stahl, Horticulturist.  
S. B. Nelson, Veterinarian.  
A. B. Nystrom, State College, Pull-  
man, Wash.

The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

The first and second choice pro-  
vision in the primary law of Wash-  
ington is an undesirable freak and  
should be abolished.

## NEEDED PROTECTION.

The Bureau of the Census publica-  
tion, U. D. Department of Agricul-  
ture for August, shows that there  
was a decrease of 24 per cent in the  
purchase of domestic wools from  
1909 to 1914. There was also a de-  
crease of about 12 per cent in the  
number of firms manufacturing wool-  
en goods. Since the war is raging  
so furiously in Europe a condition  
has arisen where the want of pro-  
tection is not felt so keenly, but  
many farmers are of the opinion we  
would all be better off without the  
war with needed protection, provided  
by the government.

## FARM INCOMES.

The income of the average farmer  
is lower than it should be. He is  
no worse off than the average busi-  
ness man, for the majority of people  
engaged in business meet with fail-  
ure sooner or later, but the farmer  
should realize a fair measure of  
profit over his food products and his  
shelter. During the past few years  
the strictly wheat farmers have done  
this. Those who have laid the right  
foundations for dairying and stock  
raising will realize accordingly as  
their endeavors are cumulative  
through a course of years.

The same may be said of the poul-  
try raisers. It is the fruit growers  
who have been hard hit during the  
past four years for want of markets.  
This difficulty is being remedied.  
Uncle Sam's marketing bureau is in  
the field to stay and by a little fur-  
ther experience the avenue between  
producers, merchants and consumers  
will be more direct and inexpensive.  
Besides the wage earners of the great  
centers of population are in better  
position to buy and fruit markets are  
destined to become more staple.

The average farmer is in need of  
more practical education to devise  
and direct his efforts with greater  
intelligence. Farmers need to figure  
more on cost of production, work into

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

some system, accordingly, and adhere  
to it.

There are many examples of dairy-  
men, poultry raisers, gardeners and  
general farmers who first having laid  
correct foundations, work progres-  
sively with definite objects for at-  
tainment in view and while in many  
cases it takes time they overcome the  
obstacle standing in the way of more  
than average farm income.

## CORN SILAGE.

A number of our readers who  
planted corn for silage in the Coast  
section are not getting so good re-  
sults as anticipated, while others will  
have a fair average crop. The sea-  
son has been unusually late and cold.  
In some instances the ground was  
too wet, not well pulverized nor en-  
riched. These are obstacles to be  
overcome. It is likely that next  
spring and summer will average high-  
er in temperature. The land which  
has been in clover or vetch or peas  
for a couple of years when thorough-  
ly pulverized is usually good corn  
land.

The seed is of the greatest im-  
portance. No forage plant is more  
sensitive to climatic change than is  
corn. Therefore it is of the utmost  
importance that seed be selected in  
this part of the country for next  
years crop, and this should be done  
during the month of October. Select  
the ears when passed the glazing  
stage, such are earliest and of good  
shape and size. Remove husks and  
hang up to dry under cover where  
there is a good air circulation. Corn  
silage for the late crop like the  
wheat vetch silage for early crop  
have come to stay. Leading dairy-  
men are growing them successfully  
with very satisfactory results.

## COW TEST EXHIBIT.

One of the most impressive ex-  
hibits at the Western Washington  
Fair was an exhibit of cows which  
had been tested six months for milk  
and butter fat, in a cow testing as-  
sociation. One cow had given over  
9000 pounds milk and produced but-  
ter fat at a cost of about 8 cents  
per pound, while the lowest cow pro-  
duced less than 3000 pounds of milk  
and the feed cost of each pound of  
butter fat was over 24 cents per  
pound, three times as much. The  
best judge of cows would not have  
determined without the test that  
there was such wide difference of  
values between these two cows. They  
were both in fair condition and of  
dairy type. The entire outfit for  
making tests was also on exhibit. A  
large number of dairy farmers who  
saw this exhibit expressed them-  
selves as determined to weigh the  
milk of their cows and make tests  
for themselves or join a cow testing  
association. This exhibit, an eye-  
opener to many, will serve to put a  
large number of dairymen on the  
right track for profitable dairying.

## UNBALANCED.

Very many things in the world are  
in an unbalanced condition today and  
one discomfort often causes another.  
Prosperity is neither evenly distrib-  
uted nor on a sound basis, and the  
causes are world-wide. Readjustments  
are taking place particularly with re-  
gard to commercial relations between  
the different countries, and the indus-  
trial and wage problems. The farm-  
ing communities are also affected,

but on the whole not so seriously as  
the thickly populated districts of the  
cities. There are some over accumu-  
lations and many losses. Shortcom-  
ings make unbalanced conditions. It  
is by overcoming them we make sub-  
stantial progress.

## THE TRAINMEN'S ACT.

The Adamson eight-hour law in-  
tended as a measure of time to  
constitute a day of labor is in  
reality not an eight-hour law, but a  
wage law. Eminent jurists are  
agreed on that point and if Con-  
gress undertakes to regulate wages  
for increased pay now will not the  
same power permit regulation for  
reduced wage, should circumstances  
require it? Here is where the great  
law of supply and demand will even-  
tually hold sway, regardless of laws  
enacted by governments.

## FRANQUETTES STAND FREEZE.

One of the salesmen of the Ore-  
gon Nursery Company traveling in  
North-eastern Washington reports a  
larger demand than last year for  
substantial orchards. The Fran-  
quette walnut trees are resisting  
temperatures here of 25 degrees  
below zero last winter, came through  
uninjured and some six-year-olds pro-  
ducing nuts this season.

## NURSERY SALESMEN.

Wheat farmers, dairymen and many  
of the commercial fruit growers are  
selling their products at very fair  
prices, evidenced by the nursery  
salesmen representing principally the  
different nurseries on the Pacific  
Coast.

These salesmen are ministering to  
the needs of the home builders in  
fruit, shade and ornamental trees,  
shrubs, roses and vines.

The nursery salesman of today is  
in closer touch with the interests  
of both the home builder and of the  
nursery he represents than was the  
"tree peddler" of days gone by,  
whose only ambition was to get the  
orders regardless of satisfaction af-  
forded.

The large nurseries on the Pacific  
Coast have invested big sums of  
money in trees and plants of all  
kinds and are taking a deep interest  
in the substantial development of  
horticulture in all its branches.

They are giving careful attention  
to the adaptation of varieties in the  
commercial, the domestic and the  
aesthetic lines, and their recommen-  
dations include warnings against  
over planting, where disappointment  
is likely to follow in the purchase  
of fruits or ornamentals.

At this time the owners of thou-  
sands of farm homes are each adding  
a few ornamental plants, evergreens  
and flowering shrubs and here the  
suggestions of the nursery salesman  
are usually very helpful, especially  
if he is an observer of the most  
beautiful places in the part of the  
country covered by his travel. A  
good nursery representative will be  
able to show how plants and trees  
may be grouped to the best advan-  
tage, making most of the planting  
arrangement already started. He is  
a benefactor whose work lives on  
and gives forth inspiration to the  
coming generations long after he has  
passed on.

Make good use of the nursery  
salesman of today. He carries a

license issued by the state author-  
ities with fixed responsibility, he  
deserves respect and the well earned  
compensation allotted for his en-  
deavors.

## GROWERS' AGENCY.

The principal activities of the  
Fruit Growers' Agency, Inc., which  
was organized last March and already  
has a membership representing al-  
most 80 per cent of the tonnage of  
the Pacific Northwest, may be sum-  
marized as follows:

Daily "Market News Service,"  
based on telegraphic reports over a  
direct wire from Washington, D. C.  
This service is conducted by C. W.  
Kitchen, market station assistant,  
assisted by H. A. Harris, also of the  
office of markets.

Special service pertaining to "Uni-  
form Account Sales" and "Account-  
ing Methods," conducted by G. A.  
Nahstoll, assistant in market busi-  
ness practice, of the office of mar-  
kets. An assistant will be assigned  
to Mr. Nahstoll in the near future  
to enable him to make more fre-  
quent visits to the various districts.

Special investigation of "Packing  
Houses and Storage Facilities," con-  
ducted by C. T. More. Mr. More is  
in Washington to consult with his  
chief regarding this work, after  
having made a preliminary survey of  
the situation in the Northwest.

The head office is at Walla Walla,  
Wash., Paul H. Weyranch, President.

## WASHINGTON FRUIT CROP.

According to estimates sent out  
by the Horticultural Division, De-  
partment of Agriculture at Olympia,  
on September 1st, Wenatchee and  
North Central District, will produce  
in car lots apples, 7957, peaches, 331,  
pears 343 and plums and prunes 90  
car loads.

The fruit from the Wenatchee Val-  
ley will be of the best possible qual-  
ity this year. There has been an  
abundance of water throughout the  
season and the fruit has made a  
steady strong growth until at the  
present time it is well sized and is  
taking on color at a surprising rate.

There will be but few worms in  
North Central Washington this year,  
owing to the thorough spraying that  
was done by the ranchers through-  
out the district.

All of the apples and pears from  
the Wenatchee North Central Wash-  
ington district will go out under the  
supervision of the League-State in-  
spection and under grading rules of  
a higher standard than that required  
by the State grading rules.

The so-called "worm sting" will  
be permitted in no grade. Such  
fruit will be used for by-products  
only.

The inspector has figured out what  
part of the total crop was Winesaps,  
Spitzenbergs, Jonathans, etc. On this  
basis the inspector has made the  
following estimates for the 1916 crop  
in percentages.

The estimated percentages of the  
different varieties stands as follows:

Winesap, 20; Jonathan 16; Deli-  
cious 6; Spitzenberg 13; Rome 9;  
Stayman 9; W. W. Pearmain 3; Y.  
N. Pippin 2; B. Ben & Gano 7; King  
David .05; W. Banana 2; B. Twig 2;  
Ben Davis 3; Ark. Blacks 2; Grimes  
1; Mixed 6.

Yakima Valley  
Kittitas County — Estimated that



Kittitas County will produce 150 cars of apples this season.

**Yakima County**—Fruit crop estimated as follows:

Peaches 800 cars; Pears 750 cars; Apples 6700 cars.

The apple estimates are credited to the different localities as follows:

Grandview District, 125 cars; Sunnyside District 75 cars; Zillah District 2600 cars; North Yakima, etc., 2200 cars; Selah, Naches, etc., 1700 cars.

Winter Nelis pear shipments expected to begin September 25th. Jonathan apple shipments expected to begin September 10th. Per cent of pear crop infested with codling moth  $\frac{1}{2}$  of 1 per cent. Per cent of apple crop infested with codling moth  $1\frac{1}{2}$  per cent. Per cent of apple crop injured by aphids  $7\frac{1}{2}$  per cent.

Growers and shippers who were familiar with the higher percentage of "wormy" and "stung apples" a year ago will be pleased to know that not to exceed one and one-half percent has been infected by codling moth this season up to this date.

These estimates were submitted by Mr. H. E. Waterbury, Chief Field Inspector for Yakima County, and Mr. F. E. De Sellem, Inspector at Large for Yakima and Kittitas Counties.

**Benton County**—The fruit crop for Benton County is estimated as follows in car loads: Apples, 240, pears, 75, peaches 49, plums and prunes 13.

#### Walla Walla District.

In Walla Walla and Columbia Counties the apple crop estimates are 388 car loads, with Rome Beauty, Jonathan, Winesap and Ben Davis predominating.

In Garfield, Asotin and Snake River points in Whitman County the estimate is 147 car loads of mixed fruits.

#### Spokane District.

It is estimated that the total apple shipments for this district will amount to 1,000 cars. Of this amount 60 cars are credited to Pullman, Garfield and Farmington localities in Whitman County, 75 cars to the Kettle Falls locality of Stevens County and the remainder principally

to Spokane County.

This has been a most favorable year for the fruit growers here, as the orchards have suffered a minimum amount of damage from pests, diseases, etc. The development of fire blight in this district has been practically confined to late twig infections, and even these are far less numerous than in former seasons. There will not be enough damage from this cause to have any perceptible effect on the crop. The damage from apple scab will also be very much smaller than last year, and the growers will lose only a small percentage of their fruit from this cause, particularly in orchards where the spraying was properly taken care of. The crop report and estimates for the Spokane district were submitted to this office by Mr. H. W. Samson, Inspector-at-Large, Spokane, Wash.

#### Clarke, Skamania and Klickitat Counties.

**Clarke County**—The former estimate of 7,000,000 pounds of dried prunes seems very conservative, and unless early rains make conditions more favorable for brown-rot, it is very possible that the dried product may exceed our estimate. Soil moisture conditions are excellent and the size of the prunes are certain to average up a good grade. The 257 driers in Clarke County will begin drying about September 15th and complete the drying of the crop in twenty to twenty-five days, depending on climatic conditions.

**Skamania County**—Apple crop estimated at 15,000 boxes. P. I. Packard, Local Horticultural Inspector, Underwood, Wash.

**Klickitat County**—Apple crop estimated at 86,000 boxes, pears 5,000 boxes and peaches, 20,000 boxes.

S. H. Boddinhouse, Local Horticultural Inspector, White Salmon.

B. W. Cooney, Local Horticultural Inspector, Goldendale, Wash.

The loss from apple scab will be much less than a year ago, although there are some indications of scale showing at this time.

The fruit crop reports and estimates for Skamania, Klickitat and Clarke Counties were submitted to this office by I. R. Fletcher, Inspector at Large, Camas, Wash.—T. O.

MORRISON, Assistant Commissioner of Agriculture, in Charge, Division Horticulture. At the request of Captain Paul H. Weyrauch, Walla Walla, Wash., President The Fruit Growers' Agency, Inc.

The fruit crop estimates for Puget Sound is not reported evidently for the reason that the local markets will absorb the crop which in apples and pears is a little below average while the yield of prunes is large.

#### THE APPLE CROP.

The August 1 forecast for the entire United States is 71,600,000 barrels, which compares with an estimated production last year of 76,700,000 barrels and in the preceding five years a yearly average of 66,000,000 barrels. Thus the crop as a whole will probably be smaller than last year's big crop, but somewhat larger than an average crop. Conditions vary, however, in different sections. In the New England States 4,864,000 barrels are forecast, compared with 2,852,000 last year. Baldwins are reported to be short, how-

ever. In New York the forecast is 12,062,000 barrels, compared with 8,528,000 last year, and in Pennsylvania 6,562,000, compared with 5,085,000 last year. It thus appears that the North Atlantic States will have materially more apples than last year; slightly more are also indicated in Maryland, West Virginia, and North Carolina. In Virginia, however, the forecast of 4,180,000 is slightly less than last year's crop of 4,393,000 barrels. In all the Central State except Michigan the forecast is for smaller yields than last year; Ohio 4,028,000 barrels, compared with 5,984,000; Indiana 1,867,000, compared with 3,883,000; Illinois 1,921,000, compared with 4,716,000; Iowa 1,715,000, compared with 3,225,000; Missouri 3,520,000, compared with 6,287,000; Kentucky 2,656,000, compared with 4,170,000; Arkansas 1,143,000, compared with 1,183,000. In Michigan, however, the forecast is an increase, being 4,810,000, compared with 3,150,000. Also in the Pacific Northwest, the forecast is for larger yields than last year, except in Idaho.

## Importance of Ground Limestone for Western Washington and Western Oregon Soils.

By HENRY BUCEY

The origin of Lime has been one of the great studies of the Geologist of the present and preceding century. They all practically agree, that Lime was a substance generally diffused throughout the earth crust as sodium and various other salts. That it has been carried by water in solution to all parts of the earth including the ocean and seas. Thus providing such substance to all plant and animal life, both of land and water. As no plant or animal can exist without being supplied with a minimum quantity which will hereinafter be noted.

But the original general diffusion of Lime throughout the earth crust, owing to and through various causes and agencies did not remain so. The action of water transported it in solution carrying it from one place and depositing it in another. Volcanic and other earth disturbances took it from one place and deposited it in another. Heat and sulphur drove out the carbonic acid of the Limestone, and water dissolved the calcium oxide and it was carried away by the current until it became recarbonated and was precipitated. Thus, we find some sections of country with Lime in great abundance, and other sections of the country very deficient, or none at all.

### Why the Soils of Western Washington and Western Oregon Are Deficient in Lime.

The mild and humid climate of Western Washington and Western Oregon, caused by the ocean currents from off the South Seas being thrown against this Coast, creates a mild climate in this country in a latitude so far north. All vegetable growth is long in maturing and when matured it falls upon the ground and lays there for months before it decays, such as weeds, grass, stubble and leaves. They lay in a mass and the sun warms them, and the warm rains fall upon them and they ferment and sour before they decay. The rain drives the acid from such vegetation into the soil, which to be counteracted, destroy the Lime of the soil. This action has been going on continuously for ages, which has greatly depleted the Lime of the soil. Especially is this the case in soils where the water does not drain off rapidly, for as a general proposition flowing water carries more or less Lime in solution. Where land is deficient of Lime it must be supplied from other sources, or the land will decrease annually in its productiveness.

#### Composition of Limestone.

Limestone is composed of calcium and carbonic acid, 56 per cent of the former and 44 per cent of the latter. The component parts



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are readily separated by the action of heat or sulphur, as sulphuric acid and many of its attributes in various forms when applied to Limestone expel the carbonic acid from same, leaving the calcium, which it enters, thus forming Sulphate of Lime. (Gypsum is such substance.) All wise Providence designed in nature the use of Lime for plant and animal life in the natural Limestone (form Lime carbonate). In such form when it becomes a solvent in the water of the earth, it supplies to all plant and animal life the necessary material for life and growth. With animals it furnishes the bones, cartilages, ligaments and tendons of their bodies and shells to protect their bodies. To plants it furnishes the tissues and cells of their structural growth.

Lime carbonate is an anti-corroding substance, and in this it performs one of the most important offices in nature. Its presence prevents the injurious effect by corrosion of mineral substance, taken into the system of plants and animals, which can only occur by reason of the absence of Lime. Mineral corrosion produces many of the numerous diseases and ailments in plant and animal life. This should be well known and understood, as there is nothing more important to plant and animal life.

When carbonic acid has been driven out of Limestone by the action of sulphuric acid, which enters into the calcium of the Limestone, it then forms out of such Limestone sulphate of Lime (or Gypsum), also known as land plaster. Sulphur is one of the greatest known agents to produce corrosion in mineral substances. Plaster made from Gypsum spread upon metal lath will, through the action of corrosion, consume the metal lath in 6 to 8 years. Therefore, the injurious effect of the use of land plaster upon the soil and plant life has caused many farmers to discontinue its use. Its application will stimulate the growth of vegetation for awhile, but its continuous use will not prove beneficial except only upon alkali lands, where it should be extensively used, as it converts sodium carbonates to sodium sulphates, which is not so injurious to plant life.

Lime carbonates is Ground Limestone, which is the pure natural Limestone ground and rolled as fine as your family flour, having all its carbonic acid retained. Prof. Hilyard, our best known chemist, says that "Lime carbonates may be said to be the basis of civilization."

#### Effect of Ground Limestone Upon the Soil.

Soil deficient in Lime if of clay, or clay loam formation, becomes drawn together at the surface, thus preventing the soil from becoming areated. The soil becomes surface tensioned and becomes impervious to air or water. When Ground Limestone is applied to such land the acid of such soil dissolves the Limestone. (Pure water will not dissolve Ground Limestone.) When dissolved it acts upon the silicates of the soil and other soil matter, forming it into minute little balls, or spheres, so that it admits air and water to the roots of growing plants. This action also makes the soil mellow and easy of cultivation.

The effect of Lime on the silicates of the soil is to unlock the soil, releasing potash and phosphorus and other plant food, which without the action of Lime would remain locked in the hard rock prisons of the soil and be unavailable for plant food. That it causes the soil to become porous, so that water and air may pass through it readily, has been repeatedly demonstrated by taking some soil poor in Lime and rich in clay, which is almost impervious to water and placing it in a cylinder 8 to 10 inches in depth and pouring into it 3 or 4 inches of water. This water will remain from 20 to 30 days before it all passes through. Fill another cylinder to the same depth with the like clay mixed with a small amount of Ground Limestone and let it stand 2 or 3 days and pour over it the same amount of water and you will discover the water will pass through in 10 to 12 hours, for the reason that the action of the Lime has formed the soil into little balls or spheres the water passes around.

Then again the finely Ground Limestone will destroy the acidity of the soil as quickly as burnt Lime or air-slacked Lime, and will not produce any injurious effect that burnt and other caustic Lime produces. It will sweeten the soil, making it suitable for plant growth.

A great amount of the heavy bottom land of Western Washington and Western Oregon which has become very acid from the accumulation of undecomposed vegetable matter, so much so that some

of these lands will require 3 or more tons of Ground Limestone per acre to correct this acidity. The farmer, or owner of such land, who fails to apply Lime enough to correct this acidity, is likely to condemn the merits of applying Lime to soils. For if there is not Lime sufficient to correct the acidity and sweeten the soil the effect of the Lime will not be in evidence. The owner of such land who applies sufficient Lime will realize in next season's crop that it was the best investment he could have made, for such land will produce enormous crops when sufficiently Limed. For a soil rich in potash and poor in Lime will become very acid.

The great cardinal principle to be observed is this, that Lime is the preferred base of all fertilizers. If you apply any commercial fertilizer to land deficient in Lime, you waste the fertilizer. Potash applied to land deficient in Lime forms a base with the silicates of the soil and is locked up. Phosphorus applied to a soil deficient in Lime forms a base with alumina and iron and becomes a rock. If you apply nitrogen to a soil deficient of Lime, you have thrown it away, for nitrogen on land deficient in Lime is the most elusive substance ever placed on soil. There is nothing that will fix nitrogen with the soil but Lime. It is through the agency of Lime that nitrogen can be extracted or taken from the air by the Norwegian and German methods, which have been patented by these countries. Therefore, never apply nitrogen to the soil except it is mixed with Ground Limestone or is applied immediately after the soil has been Limed, except when the soil is known to contain sufficient Lime.

#### Destroys Moss.

It is very interesting to watch the effect of Ground Limestone when applied to a pasture field, or meadow which has a moss growth. The moss will turn in a few days to a light yellow, then white and dry up and is gone. It will also kill out sorrel, but not so quickly as it does the moss, but as soon as the Lime becomes well incorporated with the soil the sorrel and other acid soil growing plants will disappear. A soil with moss, or sorrel, growing upon it needs at least 2 tons of Ground Limestone per acre to correct its strong acidity.

#### The Effect of Lime on Various Plants.

As heretofore stated, Lime is absolutely necessary to the growth of all plants. The amount of Lime a plant may contain depends upon the amount of Lime contained in the soil where it grew. No plant can grow without a certain minimum quantity of Lime, but if there be sufficient Lime in the soil, the plant will take to a certain limit more than that minimum quantity, or a greater per cent of Lime. All plant and fodder crops rich in Lime make a much better feed than that poor in Lime. Hence, all Limestone Countries are noted for their fine stock. On soil rich in Lime the plants are strong and stiff, short jointed and stand erect and are more fruitful. But plants grown on soil poor in Lime are tall and slender, and are inclined to fall down or lodge. They are free to bloom, but with little fruitage. Oats will yield a good crop on land rich in potash, but poor in Lime, but the quality of the oats will be inferior. The straw will be coarse and the oat grain will be in a thick hull and will be short in weight when sold by the bushel. Lime on such land increases the yield and produces a better quality of oats.

By experience and observation it has been proven that the Liming of soils which are deficient in Lime will cause an increase of at least 25 per cent in the yield of most of the staple products of the farm, orchard and garden. Lime on such soil will double the growth of clover, alfalfa, peas, vetch and like leguminous crops. The larger fruits of the orchard are immensely benefited. The vigor of the growth of the trees can soon be noticed. The bark gradually becomes smooth and spongy, and the tightness of the bark is noticeably lessened the second year after a heavy application of Lime. The fruit has a superior flavor, losing its acrid acid flavor and taking on vineous flavors instead. The fruit sends off a rich perfume, while fruits growing on acid soils never do. The roots of most of the berry plant family produce an acid that unlocks the silicates of the soil releasing potash in the same manner that Lime does. But Lime improves the quality of the berries in the same manner that the larger fruits are improved. Lime causes the berries to stand up and bear shipment. Green beans and fruit grown in Florida stand shipment better than that grown in similar semi-tropical countries. It was so noticeable that an investigation was made as to the cause, and it was discovered that such products were grown on land, with oyster shells mixed with the soil thrown up by the ocean, and that in planting their fruit trees they encoun-



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tered in digging the holes oyster-shell formations that had to be blasted before setting out their trees. These facts have been valuable information to fruit growers and gardeners living in countries where the land is known to be deficient in Lime.

### How Lime Benefits Flowering Plants and Lawns.

To the lover of flowers and rich foliage plants, we present to such in the introduction of Ground Limestone for the soil a new interest in the growing of such plants. The application of Lime to the soil produces a wonder revelation in the rich deep colored petals of the flower and the dark rich green color of the foliage of the plants. The flowers by their added brilliancy appear to be an improved variety. The flowers when cut will not wilt down like those grown on soil deficient in Lime.

All plants appear to take on a new life in such improved soil. And the effect of all fertilizer on the newly Limed soil is soon noticeable, which is not the case in an acid soil. The best foreground and background for the display of beautiful flowering plants with their rich foliage is a beautiful lawn. Such a lawn cannot be had upon a soil deficient in Lime. The grass on such soil presents a slender, limp growth of a flat green color, with moss growing around its roots impoverishing its growth. Apply Ground Limestone to such soil at the rate of 2 tons per acre and notice the result in a short time. The grass will not shoot up like a weed, but the lawn will become of a dark blue-green color. The blades of the grass will widen out from its base and become stiff and stout and vigorous. The moss will begin to turn a light yellow and in 3 weeks it has about all disappeared. When the lawn is in this condition any fertilizer placed upon the soil is soon very noticeable. The lawn mower will clip this improved grass more smoothly and evenly than ever before, for the reason that the blades of grass stand more erect and are stiff and tender, and easily cut.

### How the Products of Limed Soil Effect Mankind and the Lower Animals.

Lime is absolutely essential to the existence of mankind and that of the lower animals. The bones, cartilage, teeth, tendons and ligaments of our bodies and that of other animals are composed of phosphate and carbonate of Lime. Three-fourths of their weight are formed from phosphate of Lime. Phosphate of Lime is a tri-

basic compound formed from sodium, magnitium and flouride of calcium. Sodium is found abundant in all soils as well as magnitium, but if Lime is lacking in the soil, the tri-basic compound of phosphate of Lime will not be formed. Therefore, plants growing upon such soil will not contain this bone-forming material. All animals acquire Lime through eating vegetation that contains it, and drink of water that contains it. Human beings fare better than the lower animals living in a country where the soil is deficient of Lime, for the reason that a great amount of our food is shipped into the country, that has been grown in a country that has sufficient Lime in the soil. But with the lower animals that are compelled to subsist upon vegetation grown upon soil deficient of Lime—when this is the case, such animals are sure to become constitutionally weak, so that they cannot resist disease germs. In the great stock-raising state of Kentucky, which is called the great Limestone State of the United States, the reports show that there is but a trace of tuberculosis found with their cattle, and such is the case in all countries where there is an abundance of Lime in the soil. You can ride the fine horses of Kentucky 100 miles in a day. The same can be done with the horses from Eastern Washington, Eastern Oregon, Montana and Idaho. The soil of such countries have a calcarious base. The people and their stock raised in such countries have great bone and sinew and have great physical endurance. The western part of Washington and Oregon have a better climate than the eastern part of such states, and it only lacks the Lime in the soil to make it the most healthy place in the world.

### Effect of Lime on Dairy Products.

The milk of cows pastured upon land that has sufficient Lime in the soil will contain 6 grains of calcium salts or Lime to each pint of milk. This is a great source of bone-forming material for the young stock, also for our children. But an analysis of the milk from cows pastured on most of the land of Western Washington shows but about one-third of such an amount in the milk, and in many cases but a slight trace of calcium salts is found in the milk. The farmer and dairyman will soon discover how important to the health of his herd is the Liming of his pasture fields and meadows. This can be done with profit at any season of the year. One dollar per acre annually will supply the worst need of Lime to be found



in Western Washington, and in many cases 50c to 75c per acre annually, as one sufficient Liming of the soil will last from 6 to 10 years. Young growing stock need this bone-forming material most, as the bones of our domestic stock are formed completely in 2 to 4 years of their age, while with a human being it requires from 20 to 24 years.

Lime improves the quality of all dairy products. Milk keeps sweet longer, and is of a better quality. With but little calcium salts in the milk the curd of milk will be found coarse and clotty, and the moisture will not pass out in cheese-making like curd containing calcium salts, which is always fine grained.

#### The Kind of Lime to Use.

The leading authorities of the United States upon soil treatment have almost unanimously agreed that the proper Lime to use to improve our soils is Lime carbonates, which is Ground Limestone, which is the pure natural limestone crushed, ground and rolled as fine as your family flour. Ground Limestone is not burned or otherwise treated. The carbonic acid is all in the stone, hence it is a satisfied calcium. When a limestone is burnt it then becomes caustic lime. Its caustic properties destroy the humus and nitrogenous matter of the soil, which are much needed to make a productive soil. Air-slacked and hydrated limes are caustic lime and will do more injury the first year than it does benefit. While Ground Limestone will do no injury to any element of the soil or to any useful plant of the soil. You may plant your potatoes in it and it will not scab them like the caustic lime will. It can be used with the seed when sowing or planting and will benefit and not injure them.

#### The Grade of Ground Limestone to Use.

The efficiency and added value of Ground Limestone as a fertilizer and ameliorator of the soil depends upon how fine the stone is ground. We do not recommend it unless it is ground fine enough to pass through not less than 100-mesh sieve, which means 10,000 perforations to the square inch. The reason for having the Limestone ground so fine, is that in this climate we have but little freezing weather to dissolve and disintegrate the Limestone like it does in the Eastern States, where they do not grind the rock so fine. Therefore, in order to have it correct the acidity of the soil at once, and to become incorporated with the soil unlocking plantfood, it should be very finely ground to be effective.

It has frequently been stated by those that advocate a coarser ground material that when ground so very fine that it will leach out of the soil, and be wasted, but such is not the case, as previously stated, pure water will not dissolve Ground Limestone. It is the soil's acid that dissolves it, and when it does it acts upon the soil silicates forming it into minute little balls or spheres. Ground Limestone is a satisfied calcium, but burnt lime is not, and when water is added it immediately dissolves and goes off with it gathering from it carbonic acid, until a certain amount is had, when it is precipitated by having its wants satisfied.

#### Amount of Lime for Various Soils

The three general divisions of soil of Western Washington and Western Oregon are: First, bottom land lying on the banks of rivers and other streams and low land near Coast formed by the action of inland water and that of the tide forming the tide-flat lands. Second, are the bench or plain land lying at an elevation of from 50 to 300 feet above the first classed land. Third, is known as the upland, which are generally the timbered land. The bottom land is generally of a heavy clay, mixed with some sand, or a sandy loam mixed with clay and humus. Heavy clay land needs from 2 to 3 tons of Ground Limestone per acre; the greater amount is needed if the land contains much decomposed vegetation, causing the land to become sour. Sandy loam mixed with clay, the greater part being sand, will require one ton per acre every seven years. The tide lands lying back from the Coast a mile or more should have 2 to 3 tons per acre, which will aerate such heavy land and make it easy of cultivation.

The bench or plain land will generally be found deficient in Lime, but if well drained is not likely to be sour like the low bottom land. The owner of such land will find it a good investment to apply 1 to 2 tons of such Lime per acre.

The upland and timbered lands are generally of shot clay formation, or clay with sand and gravel mixed. All such soil will be found deficient in Lime. Such land by reason of the great rainfall during the fall, winter and early spring, has sufficient plantfood on account of the solvent power of the water acting upon the virgin soil to start vigorous early vegetation, but by the middle of June this supply becomes exhausted and vegetable growth gradually ceases.

Then is the time that apples grown upon such soil begin to show signs of scab on the surface of the skin of the fruit. Liming of such soil produces a wonderful change, for it unlocks from this virgin soil additional plant food in excess of that rendered available by the action of water and continues throughout the entire season. Apples by reason of this added plantfood do not scab, and are smooth and perfect. The amount of Ground Limestone to accomplish this is 1 ton every 5 years.

#### Time to Apply Ground Limestone.

The best time is in September, October and November, as the rains that follow assist in incorporating the lime with the soil. But more lime is applied in the spring than at any other time, and it is good advice to apply it whenever you can. It will not injure vegetation to apply it whenever you have the time and opportunity. Fall and early winter is the best time to apply the lime to meadows, pasture fields, parks, orchards and lawns, as the rains following will carry it into the soil.

#### How to Apply Ground Limestone.

Sow Ground Limestone broadcast over the land after it has been planted. Never plow it under, for you will get it too deep in the soil. The Lime works down quite readily. If it appears it is going to be dry for some time after applying it, a light harrowing will be beneficial.

For pasture fields and meadows, apply Lime at any time of the year. It will kill out the moss, aerate the soil and furnish Lime to the growing grass, which it much needs. In applying it to an orchard put it on more plentifully under the trees. The writer has sowed 2 tons a day by hand, using a 3-gallon bucket. It can be spread from a wagon with a shovel. Some spread it from little piles where it has been emptied from sacks.

A certain seeder sold by all implement dealers works well as a Lime spreader. It is called the Endgate Broadcast Seeder. Such seeder consists of a hopper-shaped implement that fastens on the rear end of a wagon box, with sprockets that clamp on the hind wheels of the wagon; a chain gear fits onto the sprocket wheel and onto the sprocket wheel of the seeder; one man driving the team, another feeding the hopper with a shovel from the Lime in the wagon box. This seeder can be bought for about \$15, and will spread 10 to 12 acres a day of this finely ground Limestone.

## GROUND LIMESTONE

The WASHINGTON PORTLAND CEMENT COMPANY and the SUPERIOR PORTLAND CEMENT COMPANY, both with plants at Concrete, Skagit County, Washington, are the greatest producers of GROUND LIMESTONE on the Pacific Coast. Their products are superior, being ground 100 mesh fine, 90% Calcium Carbonate. For prices per ton and in carload lots of not less than 25 tons, write either firm.

WASHINGTON PORTLAND  
CEMENT CO.,

809 White Bldg.,  
Seattle, Wash.

SUPERIOR PORTLAND  
CEMENT CO.,

Northern Bank Bldg.,  
Seattle, Wash.

GOLDEN SEAL  
and GENSING

\$8000 to \$20000 per acre at maturity

IF YOU HAVE SOIL AND LOCATION

Demand is good for good roots. I am booking orders now for seed and plants. Five miles of beds open to inspection.

C. E. THORPE

R. D. 1, Box 300, Seattle, Wash.

## Milton Nursery Co.

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request. Agents wanted. Attractive proposition to offer.

Milton Nursery Company, Inc.

MILTON, OREGON



**TREE PLANTING MACHINE.**

A machine which plants from 10 to 15 thousand forest tree seedlings a day is now being used at the Letchworth Park Forest and Arboretum, in Wyoming County, N. Y., according to officials of the Forest Service who are acting as advisers in the work. Previously the planting has been done by hand at the rate of 1,200 to 1,500 trees each day per man.

The machine was designed to set out cabbage and tomato plants, but works equally well with trees. It is about the size of an ordinary mowing machine and is operated by three men and two horses. One man drives the team while the other two handle the seedlings. The machine makes a furrow in which the trees are set at any desired distance, and an automatic device indicates where they should be dropped. Two metal-tired wheels push and roll the dirt firmly down around the roots.

**COMMERCIAL FRUIT AND VEGETABLE CROPS.**

Up to August 29th, there were 14,335 carloads of cantaloupes shipped to markets in the United States. Of peaches there were 10,793 carloads, new potatoes 43,590 carloads, and watermelons 21,731 carloads. This estimate is aside from that which is marketed in the cities from nearby gardens.

**LYNDEN BERRY CROP.****Growers Get -9,500 This Season.**

Lynden growers received \$9,500 for their berry crop this year, according to final figures prepared at the local cannery, say the Lynden Tribune. Just 1158 barrels of berries were packed here by H. A. Baker, of Chicago. These averaged 250 pounds to the barrel, or a total of 291,500 pounds paid for at the rate of 3¼ cents per pound.

At a meeting of the berry growers of the north and east part of the county held at Nooksack Thursday evening it was decided that it is too soon to make contracts with any buyer as it is eleven months till berry harvest again. No one of the many growers there was ready to commit himself at any price, although it was agreed that 3¼ cents per pound was not more than the growers should get for their red raspberries.

**FERTILIZER EXPERIMENTS.****Potash From Kelp, Nitrogen From Air.**

The appropriations for agricultural development U. S. Department of Agriculture include an item of \$175,000 for the purpose of investigating and demonstrating within the United States the best method of obtaining potash on a commercial scale. An experimental and demonstration plant for the extraction of potash salts from kelp will be erected and operated somewhere on the Pacific Coast, where kelp may be harvested two or three times each year. The different processes of extracting potash from kelp or of manufacturing kelp as a fertilizer will be developed for the purpose of discovering the most efficient methods of utilizing this resource.

The usual appropriation of \$35,600

also is made for investigations and demonstrations within the United States to determine possible sources of potash, nitrates, and other natural fertilizers. In these investigations are included studies of the utilization of wastes from cities, the development of nitrogen from the air, and the uses of by-products of coke and other industries.

**SUDAN DISTINGUISHED FROM JOHNSON GRASS SEED.**

Seed specialists of the U. S. Department of Agriculture have developed a method whereby seed of Sudan grass may accurately be distinguished from the seed of Johnson grass, which, while valuable in some sections, is considered so troublesome a weed in others that State laws prohibit its admission. Careful study of the seeds of the two grasses has disclosed differences in size, form, color and physical characteristics which are easily detected under a good glass, as explained in Department Bulletin 406.

**EUREKA CLOVER.**

Under the name "Eureka Clover" there is now being advertised a forage plant for which enormous yields of green fodder are asserted. The plant in question is sachaline (*Polygonum sachalinense*) introduced into the United States in 1883 and much exploited in 1893 and for a few years thereafter.

Sachaline is a native of the island of Saghalien, whence it obtains its common name, and from where it was first described in 1859. The plant is a hardy herbaceous perennial and spreads by stout creeping rootstocks. The stems of well grown plants become 6 to 15 feet high and bears numerous large heart-shaped leaves. The flowers are small, greenish-white and form in small clusters in the axis of the leaves. Seeds are produced rather sparingly.

In the advertisements of "Eureka Clover" it is claimed that in Western Oregon it will yield over 300 tons of green forage to the acre. In Europe it was asserted that yields of from 100 to 200 tons per acre were secured. In all cases published, however, the yield seems to have been estimated from the produce of a single plant, a method which gives results far greater than ever are realized in actual agriculture.

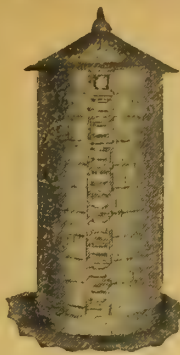
It is quite possible that in certain portions of the United States, such as the Coast Section of Washington and Oregon, sachaline may be a valuable plant to cultivate, but one should test it cautiously by first trying a few plants.

**FALL SEEDING OF VETCH AND WHEAT.**

In Western Washington a good deal more seeding should be done in the fall than has been practiced up to this time. Wherever the drainage of the land is such that water don't stand over it in the winter time crops will develop very early in the spring, if seeded in the fall.

You will no doubt wish to follow your corn or other cultivated crop with some kind of fall seeding so as to have some green feed for early spring, and a crop to put into your silo for summer feeding.

Vetch is a good crop to sow in the

**Use ALBATROSS Glod Water Paint**

(White and Fourteen Colors) on your silos, barns and fences, etc. The cost is a fraction that of oil paints. Two coats cover better than 3 coats oil paint. Sold in powdered form, needing only addition of cold water to make ready for use.

Packed in barrels, boxes and 5-lb. cartons.

Color cards sent promptly.

If your dealer cannot supply you, call or write

**GENERAL BASIC PRODUCTS CO.,**

General Offices: Hoge Building, Seattle, Wash.

**FRUIT AND POULTRY**

We have facilities to handle quickly and advantageously

**YOUR FRUIT, POULTRY AND EGGS**

We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation.

923-5 Railroad Avenue,

CHAS. UHLEN,

Spokane, Wash.

**AGENTS TAKE NOTICE**

Farmers and fruit growers are getting the highest level of prices for their products in twenty-five years. Our best salesmen are turning in from \$500 to \$700 per week—other men from \$100 to \$500. There is a big opportunity for you to make money this Fall and Winter selling general lines of nursery stock to farmers and others in home orders, including Fruits, Flowers, Shrubbery, Shade Trees, etc. OUR NEW AGENTS CONTRACT IS A WINNER. Any young or middle aged man can succeed. Write at once for choice of territory. Address, **PACIFIC NURSERY COMPANY,** 122½ Grand Ave., Portland, Oregon.

**Rhododendrons**

**WASHINGTON STATE FLOWER**

Collected from the Forest

Plants 5 to 10 inches, sent in lots of 10 or 100 plants, postpaid. Transplants also sent postpaid. Madronas, Huckleberries, Spireas, Berries and other wild fruits, plants and flowers at same prices, or collected and potted or transplanted for spring delivery. Write for price list.

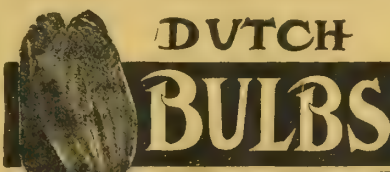
**JOEL SHOMAKER,**

**Olympic Nature Nursery**

Nellita, Washington

**WHEAT-VETCH SEEDING.**

We are prepared to furnish seed for fall planting, that has been grown on Whidby Island, a very superior variety of spring vetch and winter wheat that yielded this year ninety bushels per acre, with very stiff straw. We will furnish this already mixed in the right proportions. It has been thoroughly recleaned and contains no noxious weeds. The supply is limited, therefore send in orders at once.—**C. J. ZINTHEO,** Central Bldg., Seattle, Wash.



You gain a whole YEAR by FALL PLANTING

**ROSES TREES and PLANTS**

**64 PAGE FALL Catalog**

Listing the best new and the popular standard varieties.

Ask for CATALOG No. 51

**ZEROLENE**  
*the Standard Oil for Motor Cars*

Buy the Gasoline Lanterns, Lamps, Mantels and repairs you require early. Send for descriptive circular at once to

**BEN OLSON CO.,**  
1330 Commerce St.,  
Tacoma, Wash.

**HARDWARE**

Complete lines for needs of farmers. High quality, prompt service, right price.

Roofing Paper  
Write us your needs.

**HENRY MOHR HARDWARE CO.**  
1141 Broadway, Tacoma, Wash.



fall, but it should never be sown alone, as it lodges too much. It should be sown with either winter wheat, oats or rye.

Winter rye comes on about six weeks earlier than the vetch and has a tendency to choke it out, if left till the vetch is ready it becomes so coarse and woody that it has very little feeding value in it. For these reasons it is not advisable to sow rye and vetch.

Winter oats has a tendency to winter kill in this country and the straw is so soft that it is not able to hold up the vetch. For this reason it is not advisable to plant vetch and oats.

Winter wheat comes on about the same time as the vetch; it stools better than either oats or rye and the straw is stiff enough to hold up the vetch. Therefore the winter wheat is the best to plant with the vetch for fall seeding.

There are several varieties of vetch. The so called winter vetch grows very tall, but it has this characteristic; the lower pods are mature, while those half way up the stem are just forming and the top is still in bloom. For this reason by the time it is ready to cut the lower pods have shelled out and re-seeded themselves and it is almost impossible to get rid of it after once sown in the field, as it becomes a weed.

The so called spring vetch matures more uniformly and therefore it should be planted with the winter wheat in the fall as early as possible and preferably on land that has been cultivated during the summer and is well drained.

Plant thirty to forty pounds of spring vetch and fifty to sixty pounds of winter wheat to the acre. Use the regular grain drill and set it as you would for planting all wheat. Have your ground well cultivated before planting, discing it several times after plowing—C. J. ZINTHEO.

### FALL SEEDING.

As fast as the ground can be made ready fall seeding is being done in the Coast Section. A considerable number of farmers are sowing about a bushel of blue stem wheat and 30 pounds vetch per acre for an early spring forage crop.

They figure on making a silage crop about the last of May, then to use the ground for corn or some second crop. Other dairymen are seeding with clover and a mixture of brome and rye grass seed for pasture. Several report good results with sweet clover, which is a deep rooting plant and a good cropper. When cows become accustomed to it relish and do well on sweet clover pasture. Wherever any cleared land is available the fall is the time to sow any kind of grass seed in the Coast Section, and the sooner done the better start before the ground becomes too cool for good growth.

## Powder Clubs

By H. K. Benson, State University, Seattle, Wash.

To transform two and a half million acres of logged off land into farms is a gigantic financial undertaking. It is almost useless to mention the sum of money involved on

account of the hopelessness of even providing it. Yet this is precisely what must be done, before farms can be established in the wilderness of debris now so characteristic of our logged off area.

The plan which I want to present is not new. It is merely the application of principles of business organization proved by time as both sound and desirable. It is expressed in the one thought of cooperation between business men on the one hand and farmers on the other. It involves no legislation and no departure from accustomed forms. Initiative is the sole requirement. How can the actual farmer be grub-staked until such a time as his claim becomes income producing is the essence of the question propounded. The only difference between the minor and the farmer is that the latter has a sure thing while the former has a prospect.

To clear two and one-half million acres of land requires the equivalent of 250 million dollars. In this undertaking the men of our cities—our financial centers—have taken no interest. It is expected that our farmers shall finance it completely. Yet in the same breath we admit that the farmer is no financial genius and at the very outset we know that if such capitalization must be provided by the farmer, that it will be the accomplishment of centuries instead of years. To accelerate the process is the object. When overwhelmed by our own impotency we invariably regard the government as a "first aid" agency and seek its help. But in a democracy it simply means that we merely help ourselves. We pay the bill just the same. For this reason I am making a plea for some form of voluntary organization that will accomplish the same thing—for the application to land clearing of the same business methods as to the building of a factory.

### System and the Machinery.

Let us examine these methods briefly. We will assume that on Puget Sound we propose to establish a textile industry. A number of men imbued with the idea have studied the situation. They show the abundance of raw materials, the supply of labor and opportunities for marketing. With these facts they approach financial institutions and more men become imbued with the possibilities of establishing such an industry. Money begins to flow into the industry, buildings are constructed, equipment is collected, men are at work and commodities are produced. Perhaps the profits are sure, yet it is a matter of history that all manufacturing industries are uncertain. They are the victims of circumstances. Sometimes tariff laws are unfortunate or else general trade conditions are adverse or labor conditions are unfavorable and so on. One year business is good, another year it is bad, but nevertheless it is always financed through the initiative of small groups of men who have promoted or organized it.

Agriculture is the oldest basic industry of the ages. The sun shines and the rains fall in spite of tariffs. The fertility of the soil is not re-



## Christopher Nurseries

Select your roses and ornamental plants from choice acclimated stock which satisfies. Send for our catalog at once for information about new choice varieties of deciduous and evergreen plants and description list of fruit trees of all kinds. Nurserymen for four generations. Satisfaction assured.

JOHN A. STEWART & SON,  
Christopher, Wash.

## Elderly Men!!

### YOUR OPPORTUNITY

Many middle-aged and elderly men are making good money selling our hardy guaranteed ornamentals, roses, fruit trees, berries, etc.

Our field reaches from Montana to Southern California, and from New Mexico to Northern B. C.

Cash Advanced Weekly. — Expenses partially provided. You will be surprised at the business you can get in your own locality.

Write Us Today.—If not interested, perhaps you know some energetic, intelligent man now unemployed.

## Washington Nursery Co.

TOPPENISH, WASH.

Largest between the Rockies and Cascades.

## Twenty-five Per Cent Reduction

On all apple, pear, peach, prune, plum, cherry, apricot, nut, shade and ornamental trees, berry bearing plants, flowering shrubs, vines, hedge plants, roses, etc.

We need more room in our nurseries for spring planting.

All stock clean, healthy and thrifty. Grown on virgin soil two years from sage brush.

Most complete stock in the Northwest from which to select.

ALL STOCK TRUE TO NAME

Send today for special price list and descriptive catalog.

O. & F. NURSERY CO.  
BOX 217B, WAPATO, WASH.

## Vetch Seed

We make a specialty of this great fall crop and can furnish in any sized orders at the very lowest market prices.

## Clover and Grass Seeds

We are in a position to quote very attractive prices on the highest quality seeds and ask you to send us a list of what you want for prices.

## D. A. White and Sons

255 State St., Salem, Ore.

lated to the laws of supply and demand. Agriculture as an industry

## Small Fruit Plants

- at

## Wholesale Prices

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|--------------|------------|
| Blackberries | Dewberries |
| Raspberries  | Currants   |
| Loganberries | Grapes     |
| Strawberries | Rhubarb    |
| Gooseberries | Asparagus  |

Write for Price List.

## F. H. Burglehaus

SUMNER, WASH.

## WANTED

### Men with Gray Hair

Throughout Washington and Idaho we have several good openings for solicitors—elderly men preferred—selling our reliable, non-irrigated stock, including all kinds of Fruit Trees, Shade and Nut Trees, Ornamental Shrubbery, Roses, Vines, etc.

Established in 1867, our company has been supplying planters with dependable nursery stock ever since.

The name "ORENCO" carries with it the assurance of the utmost "Reliability and Satisfaction" in nursery purchases.

It makes selling Orenco Trees easy.

Don't you believe if you were to work as faithfully "selling Orenco trees" as you are now doing you would make more money and make it easier?

Let us explain to you our terms to agents.

Full time men preferred, but part time if desired.

If you can sell trees we want you and you need us.

Many a man is a good salesman but don't know it till he tries. Why not try?

For further particulars write

OREGON NURSERY CO.  
Orenco, Ore.

## WALNUTS

## Loganberries

These two crops are making more money than anything else for the grower. Planting is being very extensively done in the Pacific Northwest. A steady and certain demand insures you splendid returns from your land.

We can supply you with guaranteed stock, and which should be planted for heaviest returns. Catalogue and prices on application.

SALEM NURSERY COMPANY  
SALEM OREGON

We offer an excellent opportunity to the live, energetic salesman.

has been a sure thing throughout the history of the race. Yet this industry in the State of Washington



can not be financed. We lack equipment with which to produce. We ask for volunteers to go out into the financial centers to get the money for the purchase of equipment in order that we may produce that which may so readily be sold. The equipment in the case of the agricultural use of our logged off lands is the clearing. Into the clearing of land money must flow if agriculture is to become an immediate industry. Farm loans are nothing new. They constitute the mecca for insurance and trust funds. But in Western Washington, aside from the river valleys, there are no farms in the sense that the term is used elsewhere. We need loans for farms-to-be. We can finance a textile factory so that it may produce textiles, not after it has produced textiles. We shall have to finance farms before they produce instead of after they have produced.

#### Working by Groups.

The fundamental problem is stated at the window of the bank cashier. The settler applies for a loan of \$1000 with which to buy powder to clear 20 acres of land. He proposes to match this loan with a thousand dollars worth of labor. Does he get this loan? The chances are that the bank cashier cordially informs him that his bank can make no loans on unimproved land. The fallacy, of course, lies in the lack of cooperation between the banker and the farmer. The financier who advanced funds for the building and equipment of the textile factory might have said the same thing. But he understood the problems of the manufacturer. He knew that the factory must first be built before it can produce. Why cannot the bank understand that the land must first be cleared before it can produce? Now, I know that banks operate under certain laws and I have used the term bank as synonymous with money, since the same thing would happen if the farmer went to any other financial agency. There can be no remedy so far as I understand this problem until a responsible "go between" is established—until an intermediate agency fills the gap between finance and agricultural promoters.

We have examples of what can be accomplished by live organizations such as "cow clubs," where perhaps it is found that in a given community 200 cows are required by some 40 or 50 farmers to make their herds profitable. A \$20,000 loan is made, the cows purchased and distributed and monthly payments made by the farmers until paid for. Similar work is sometimes done by commercial organizations using a revolving fund. The whole point is that without such an intermediary the farmer would be left alone, struggling with his undersized, non-paying herd to the detriment, not only of himself, but of the whole community.

The plan I propose is similar in all intents and purposes, except that instead of the loan being repaid in months it will be repaid in years, which should make it all the more attractive from the loan side. It might seem presumptuous to propose the details of such an organization. They would have to be worked out along the specific practical lines which business men alone are capable of working out. The main point is to get the business

men to do it. Let us assume that in the vicinity of one of our smaller towns are located 50 settlers in logged off tracts. They are struggling along in the well-known characteristic manner which small acreages cleared and minus incomes. Twenty acres additional in each farm would change it from a non-paying to an income-producing basis. The individual farmer agrees to put up as security the unencumbered 20 acres which are to be cleared and to complete the clearing with his own labor and to pay in yearly installments the money advanced for the purchase of powder. The next point is to get the loan. But suppose the local banker, the editor of the town paper, and several of the largest merchants constituted a committee or board of managers. These men of business know the farmers personally, know the land, and are in general familiar with the details required for the safeguarding of loans. Would it not be far easier to obtain and administer such a loan than the isolated loans at the bank cashier's window?

#### Practical Co-Operation.

The criticism is made that it is difficult to persuade 50 farmers to join at one time in a request for a

loan or to induce 50 farmers at one time to engage in land clearing. My own experience is to the contrary. During the three field seasons I was connected with the soil survey I came in daily contact with farmers in every county of Western Washington. Without exception they gave expression to the sentiment: "We know how to clear land. Supply us with powder and at once our land will be cleared." In other words, the actual cash outlay for splitting up fir stumps so that they can be pulled out with block and tackle or stump pullers is the main detriment. Supply this capital and the problem loses its seriousness. The men who live on these lands are willing and eager to remove the handicaps. With farms successfully established and the high percentage of failures reduced, an incentive for settlement will follow and the whole problem adjusts itself in the normal and natural manner as the problems of every other industry are adjusted.

It is needless to speak of the incentive to the banker, editor, and merchants for their service. Their rewards will come with the increased purchasing power derived from the productivity of the land thus cleared. They will enjoy in

their business the stabilizing influence of agriculture which is un-mindful of hard times or good times, but year in and year out a steady customer exchanging that which the land produces for that which the city manufactures.

The remedy I propose is cooperation between men of business and the actual or prospective settler. To initiate such cooperation it is necessary to wreck the profound indifference which now so largely dominates the men of our cities. How this can be brought about I refuse to answer. Perhaps by propaganda, by agitation, or by legislation. Whatever the method, the financing of land clearing must be undertaken as an industrial enterprise or else the occupation of all but a fraction of our logged off lands will be postponed for many years to come.

#### FARM PROPERTIES

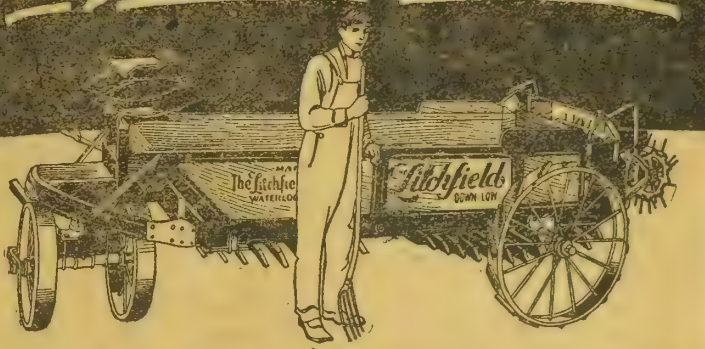
Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. **DANIEL MCGREGOR, Berlin Bldg., Tacoma, Wash.** Established over 30 years

**WANTED**—To hear from owner of good ranch for sale. State cash price and description.

**D. F. BUSH, Minneapolis, Minn.**



# Great Special Offer!



## Take This Litchfield Manure Spreader FREE Right Now—Pay for It Next Year From the Increased Value of Your Crops

**H**ERE is the most astounding offer any implement house ever made to any farmer. We give you the means of making a bunch of money, and **WAIT FOR OUR PAY UNTIL YOU MAKE THAT MONEY.** Here's the proposition: Order a Litchfield Spreader today. Use it this Fall to spread on your fields the manure that is going to waste around your farm. Pay for it **NEXT YEAR** after it has more than paid you its purchase price in increased earnings.

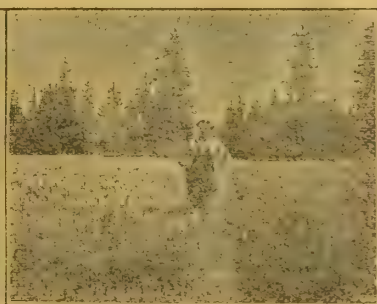
### Will You Profit by This Great Offer?

**L**OOK at these pictures! They show what **YOU** can do on **YOUR** farm with a Litchfield Manure Spreader. Send the coupon **TO-DAY**, and get full particulars of this wonderful offer. Don't lose a minute! Only a limited number of Litchfields can be sold on such liberal terms. Be one of the few to profit by them. Write today for full particulars.

Do it **NOW**—Use the coupon below.



A LITCHFIELD CROP



NO LITCHFIELD—NO CROP

Actual photographs taken on the farm of A. B. Marshall, Albany, Oregon, showing field where Litchfield had been used and field where it had not.

**R. M. WADE & CO.** Oldest and Largest Independent Wholesalers of Farm Machinery in the Northwest  
SINCE 1863  
PORTLAND, ORE.

**R. M. WADE & CO.**  
322 Hawthorne Avenue  
Portland, Oregon

Please give the full particulars about your Special Litchfield offer as advertised.

Yours truly,

NAME \_\_\_\_\_

(Write Plainly)

Address \_\_\_\_\_



**SOUTHWEST WASHINGTON FAIR.**

First fair event of the season took place at Chehalis and as usual served admirably for further agricultural development in Southwest Washington. The displays of grasses and grains under the supervision of F. A. Degeler is strong evidence that this part of the state will produce feed for great numbers of dairy cattle and hogs. John Hanson of Oakville was the prize winner again this season for general farm exhibit.

Carl P. Staeger, Dryad, with 320 separate and distinct varieties, was a close second.

While this part of the fair is an incentive for the general feed crop grower, the keen observer cannot fail to realize the great opportunity afforded for seed growing. There is sure to be a tremendous demand for high quality seeds of vetch, clovers, peas, timothy and other grasses and if the farmers of this part of the state do not meet this need by home production, considerable sums of money will be expended elsewhere to obtain them. Revenue from seeds ought to be a large asset with farmers in this part of the state.

The live stock exhibit was of excellent quality and highly beneficial to the people of the district who feel they are on a good working basis for practical live stock breeding.

The Pacific Coast Condensed Milk Company had 25 head of its finest purebred Holsteins on exhibition, including many of the sires and dams that are making their Carnation stock farm famous.

W. A. Hamilton & Sons, whose Holstein herd is the largest in this section of the state, just south of Chehalis, had about a dozen head of blooded animals on display.

F. M. Svinth also had on exhibit a fine bunch of Holsteins, among the number the head of his herd, which was awarded the first prize in its class.

J. C. Bush had five head of purebred Holsteins on display and among the five a fine bunch of ribbons of blue and red.

The Grasmere Dairy Company of Chehalis, of which N. B. Coffman is the leading spirit, had several head of purebred Jerseys on hand and among the number some that are making records that will eventually make his herd famous in the northwest.

Outside exhibitors of purebred stock, aside from those named are C. F. Reid, of McMinnville, Ore., who had 20 Jerseys; F. H. Porter, of Halsey, Ore., 16 Red Polled cattle, and W. H. Cleveland, of Gresham, Ore., fine bunch of Jerseys.

The swine, sheep and poultry were also of excellent quality and prospective buyers were in much greater evidence than at former fairs held here. The youths stock judging contest was very interesting, five silver cups being given by the Coffman, Dobson & Co., Bankers. The winners were:

Dairy Cows—Jack Smith and Raymond Bright, Chehalis.

Hogs—Cleo Pier, Elmo Kaylor, Forest.

Beef Cattle—Edison Smith, Toledo.

Horses—Irvin Pier and Rex. Anderson, Forest.

Sheep—Daryl Leonard, Chehalis.

Secretary Geo. R. Walker handled this fair in a safe and most highly satisfactory manner.

**FLAX AND LINEN.**

The development of an American Linen Industry is under consideration by the Bureau of Foreign and Domestic Commerce. W. A. Graham Clark has issued a Special Agents Series No. 122 on this subject, which may be obtained for the nominal price of 5 cents from the Superintendent of Documents, Washington, D. C.

**SUGAR BEETS.**

Popular Bulletin No. 105, of the Experiment Station, Pullman, Washington, points out the great growth of the sugar beet industry in this country and calls attention to the fact that early results in the raising of beets in this State indicated that the State could produce a quality and yield superior to most if not all beet growing districts in the United States. The bulletin gives detailed information in regard to the raising of sugar beets in some dozen or more localities of the State of Washington, especial attention being given to some of the larger irrigated districts.

Director Cardiff calls attention to the fact that the most important problem in connection with the establishment of this industry in this State is the labor problem. In fact, there are few other difficulties connected with the industry. Attention is also called to the fact that the introduction of beet growing into a crop rotation system is of great benefit to the soil, especially in those districts which have had alkali trouble.

**EELWORM CONTROL.**

Various means of controlling the pest have been tried, but the most satisfactory as well as the most practicable method consists in the proper system of crop rotation in combination with sanitary measures. By planting infested fields for two and, better still, three successive years to crops which are immune or resistant to the nematode, the pest will be starved out to such an extent that little infestation will occur on a susceptible crop planted the following year. To make the rotation effective, it is highly important that all weeds or other plants which might harbor the parasite be scrupulously eliminated. For this reason, it is advisable to plant the immune crops in rows so that clean cultivation may be practiced.

**SUDAN GRASS.**

Numerous farmers all over the Pacific Northwest are having good results with Sudan Grass. At Oregon City, samples showed 6 foot growth in 60 days on the farm of George Brown. In some places where there is abundant moisture and warm growing weather two and three cuttings, it is said, will have been made by the end of the season.

**WHEAT AND CORN CROPS.**

According to the Bureau of Crop Estimates, U. S. Department of Agriculture, damaging influences during July reduced the prospective yield of 71,000,000 bushels to a present indicated total of 199,000,000 bushels. The total production of all wheat has therefore declined from July 1 figure of 759,000,000 bushels to an August

**FALL SOWING**

In the Coast Section there is more early fall sowing this year than usual of Vetch-Wheat combination, clovers, and other grass seed to produce the bumper yields for next year. Orders should be placed at once for the required seeds. Our stock is clean, of highest germinating quality and we ship promptly. Send for our catalog, from which to select for complete seeding and farm machinery equipment.

**Pooles Seed & Implement Co.**

1507 Pacific Ave.

Tacoma, Wash.

**GROUND LIMESTONE**

is the Great Basic Element for the improvement of the soils of Western Washington and Western Oregon, where the soils are generally deficient in lime. Our finely ground limestone will be applied by farmers and dairymen on their meadows and pasture fields, beginning with September, and for other crops later to suit requirements, as the yield is increased and quality improved economically with ground limestone.

Write for prices per ton and in car load lots of not less than 25 tons.

**Washington Portland Cement Co.**

Ground Limestone Dept.

809 White Bldg.,

Seattle, Wash.

**Vetch = Wheat = Oats = Rye**

A COMPLETE LINE OF

SEEDS FOR FALL SOWING

THE BEST QUALITY, LARGE QUANTITY

**Tacoma Implement Company**

1521 PACIFIC AVENUE

TACOMA, WASH.

**The High Price of Hay**

The high price of hay last spring did not work any hardship on our customers, because they had laid in enough best quality alfalfa hay last fall at \$12 or \$13 a ton, delivered, to last them through the winter.

One dairyman to whom we sold 200 tons of hay was offered \$30 a ton for some of it in the spring.

Take no chances. Determine as soon as you can how much hay you will have to buy for your winter needs, then lay in your supply of best quality alfalfa in car lots before the price begins to advance. Write us for prices.

**Karr Investment Co. No. Yakima Wash.**

GROWERS OF APPLES, POTATOES AND HAY

**WALNUTS MOST PROFITABLE**

Walnuts are now the most profitable crop grown in the Northwest. Our oldest orchard 4 to 9 years from the graft will pay 6 per cent on a \$1000 per acre valuation this season. The chance of over-production is remote as we now import over 40,000,000 lbs. of walnuts annually.

Now is the time to order your trees for fall and spring planting. Our Vrooman Franquette trees have been planted all over the Northwest and are proving their superior quality. They are grafted on selected Northern California Black roots with scions cut from our own orchard.

Come before harvest and see the nuts in the orchard; see the fine straight trees in our nursery and the splendid growth made in our new 47-acre orchard planted last spring. To see these things will convince you that our statements are true. Write for our walnut booklet and price list.

GRONER &amp; McCLURE, Hillsboro, Oregon

**ORNAMENTAL PLANTS**

of the very choicest selections at reasonable prices. Flowering shrubs, evergreens, roses and hardy perennials, well shaped stock. Submit your planting needs for design.

SANDVED NURSERY CO.

1803 39th St. No., (On Madison St. Car Line)

Seattle, Wash.



I promise of 654,000,000, an amount but little in excess of the probable needs of the country, leaving but a slight margin of the present promised crop for export.

#### Corn.

A corn crop for the country as a whole of 2,777,000,000 bushels, slightly more than average, was still promised on August 1, although the condition and stage of development of the crop on that date was such that considerable improvement or very great decline was possible, dependent on whether needed rains should occur in the central corn belt.

#### GOOD ROAD MEN.

Prof. O. L. Waller states that every county needs men trained in road-building, men who know how to get the most out of the dollar. This shortage of tarined road engineers is not confined to the west alone, but is general throughout the United States.

Eighteen state highway commissioners report a lack of trained road engineers. Sixteen hundred highway engineers are now employed by 24 state highway commissions. Counties and cities are employing 2000 more.

We need more better trained men to direct the economical expenditure of our road money. We must stop wasting it, for present methods of transportation will soon demand good roads everywhere.

#### SOIL INOCULATION FOR LEGUMES.

Legume crops (clover, alfalfa, peas, etc.) are among the most valuable of farm crops. Trouble is experienced at times, however, in growing them in new agricultural districts or regions where legumes have not been grown before. This difficulty oftentimes is due to the absence of the necessary tubercle bacteria from the soil in question. The practice should be followed, therefore, of inoculating the soil or seed when any of these crops are grown upon ground which has never grown the crop before.

This inoculation may be made by the use of soil from a field in which the legume has grown. This soil should be obtained from the old legume field and distributed over the field to be sown in legumes at the rate of approximately 300 pounds per acre, and at once harrowed or disked in. This operation should take place during the morning or evening or upon a cloudy day, as the intense sunlight destroys the bacteria. Care should be exercised in making this transfer of soil to get it from fields which are not infested with weeds.

Should such soil not be available, Dr. Ira D. Cardiff, Director and Botanist of the Washington Agricultural Experiment Station, states that the next best method of procedure is to use a pure culture of bacteria which may be mixed with the seed before it is sown. These pure cultures may be obtained from the Department of Botany, State College of Washington, Pullman, Washington, at a cost of 25c per acre—approximately the cost of producing the cultures. Directions for using will be sent along with the cultures in question.

Write the Experiment Station, Pullman, Washington, for bulletins on the growing of clover, alfalfa or field peas, and mention this paper.

#### PEA CROPS.

For years we have been urging farmers in the Pacific Northwest to grow peas, because this forage and grain crop is naturally well adapted to the cool night conditions here existing. It is a soil-enricher, every year's crop adds to the fertility of the soil, and with scarcely an exception peas sell for good market prices. To more explicitly verify these statements we give the experiences of farmers in Spokane county this season, as shown by the county agent, Mr. J. R. Shinn.

The crop, he stated, would run from 250,000 to 300,000 bushels, and every bushel of it will be sold at prices ranging from \$1.50 to \$2.50 a bushel. This crop will be from five to six times as large as the greatest crop of peas raised in the county before. Last year, when the high mark of pea production was reached, the total amount was about 50,000 bushels.

"Farmers of this county are going to be about a half million dollars richer this summer as a result of listening to the gospel of pea growing," declared Mr. Shinn. "All these peas have been grown on land that ordinarily would have been summer fallowed, and brought in no revenue at all.

"In addition to the rich reward this year from the peas, it has been proven that the wheat crop on the pea fields the following year will be heavier.

"One man had forty acres ready to summer fallow this spring. I urged him to plant it to peas rather than let it be idle. He reluctantly did this, and he has just sold his peas for enough net profit to buy a large automobile."

#### THE U. S. WAREHOUSE ACT.

The central purpose of the U. S. Warehouse Act which became a law on August 11, 1916, is to establish a form of warehouse receipt for cotton, grain, wool, tobacco and flaxseed, which will make these receipts easily and widely negotiable as delivery orders or as collateral for loans and, therefore, of definite assistance in financing crops. This purpose the act aims to attain by licensing and bonding warehouses under conditions which will insure the integrity of their receipts and make these receipts reliable evidence of the condition, quality, quantity, and ownership of the products named which may be stored with them.

The Secretary of Agriculture is given general authority to investigate the storage, warehousing, classification, weighing and certifying of cotton, wool, grains, tobacco and flaxseed, and to classify warehouses for which licenses are applied for or issued.

#### A Permissive Statute.

He may issue to warehousemen licenses for the conduct of warehouses in which such products may be stored for interstate or foreign commerce, and also of warehouses located in places under the exclusive jurisdiction of the United States in which such products may be stored. Persons who are not warehousemen may also be licensed, subject to the same requirements as licensed warehousemen, to accept such products for storage in warehouses owned, operated or leased by any state. Licenses may be issued for periods not exceeding one year, and are renewable upon show-

## The Puyallup Nursery

A. Lingham, Prop.

702 Pioneer Ave. E., PUYALLUP, WASH.

Hardy Ornamental Trees and Shrubs a specialty.  
Specimen Evergreens, Rhododendrons, Azaleas, Hollies, Perennials, Roses, Bulbs, etc.  
Write for list.

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SCAPPOOSE, OREGON

## BOXES

For Fruit Growers  
and for Creameries

All kinds, Quality A1, Prompt Shipments

PACIFIC BOX COMPANY

26 and East I St.,

Tacoma, Wash.

## NEW CROP—

# SEEDS

FOR FALL SOWING

## Vetches, Alfalfa, Clovers, Grains, Grasses

SELECTED RECLEANED FARM and FIELD SEED  
AT LOWEST MARKET PRICES.  
SPECIAL MIXTURES FOR WET LAND  
— DRY LAND — BURNS—PERMANENT  
HAY CROPS AND PASTURES.

Cover Crops for Orchards—Dry Land Pasture Mixtures

OUR SEED LABORATORY is in charge of a skilled analyst and all "DIAMOND QUALITY" Seeds are TESTED for PURITY and GERMINATION

## WRITE TODAY FOR SAMPLES

NOTE THEIR PURITY and WEIGHT

Or send in your order direct. We guarantee full value for the money sent and will give your inquiries our prompt and careful attention

Ask for Catalog No. 50

# PORTLAND SEED

## COMPANY

PORTLAND, OREGON



## Alfalfa and Other Seeds

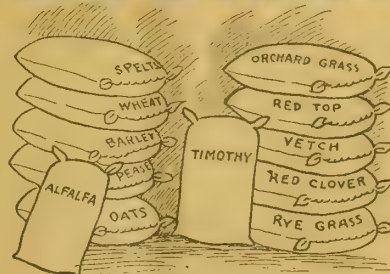
Mr. Farmer, what do you think of the dealer that pulls off his coat and goes out through the growing seed fields and inspects every square foot that is under cultivation? Add to this a government test. Then if you should not get the best seed on earth tell us why. We take these precautions; your neighbor knows us if you don't. Better get acquainted. We have no cheap junk. Do not bother to answer this ad, if this is what you expect. We sell only classy stock at reasonable prices. Samples, prices, information, etc., upon application. Wholesale and retail.

V. A. PETERSON ALFALFA SEED CO.

Arbuckle, Cal.

Make our seed your seed.

# Seattle Seed Co.



810 Western Ave. - Seattle

Early Fall Sowing with our choice grass seeds or combination Vetch Wheat, enables the dairyman and farmers of the coast section to get full benefit of the winter cropping season.

Send for our catalog today

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



ing satisfactory to the Secretary of Agriculture. A fee not exceeding \$2.00 may be charged for each license or renewal, and, in addition, a reasonable fee for each examination or inspection of a warehouse made upon application of the warehouseman. It is not, however, compulsory that any warehouseman be licensed by the Secretary of Agriculture. The system is wholly permissive.

Every applicant for a license as a warehouseman must agree to comply with the Act and the rules and regulations prescribed under it. He must give a bond, with other than personal surety, to secure the performance of his obligations as a warehouseman under the laws of the place in which the warehouse is conducted, under his contracts with his depositors, and under the United States Warehouse Act. The right is given to any person injured through its breach to sue in his own name on the bond for any damages sustained by him. When such bond has been given, the warehouse may be designated as bonded under the United States Warehouse Act.

#### FORESTS AND WATER.

Influence of fire protection over the water supply, according to the Forest Service:

Destruction of the vegetable matter in the forest floor, with consequent reduction in the capacity of the soil reservoir, is one of the most serious evils caused by forest fires. Every fire, no matter how small, reduces to some extent the effectiveness of this vegetable sponge. One large fire may wipe it out completely; repeated fires are sure to do so. After the collection of leaves and twigs is destroyed, a large amount of the water from subsequent rains instead of soaking into the ground runs off on the surface.

The result is seen in the rapid rise of the streams after every storm, a decreased supply of water during periods of drought, and the destruction of the soil itself by means of erosion. The effect on artificial reservoirs that lie below the burned-over area is disastrous. They are filled up rapidly with the sand, gravel, and other sediment washed down from the eroded portion of the burn, and their capacity is correspondingly reduced, sometimes even to the point of rendering them useless. In the same way floods may completely ruin irrigated lands by washing them out or by burying them under a mass of sand, gravel, and boulders which absolutely precludes cultivation. In one case in Southern California, for example, a body of irrigated lands was damaged to the extent of \$60,000 by a single flood which followed the burning of the brush-covered foothills from which the water supply of the settlement was derived.

Because the National Forests include, in whole or in part, the headwaters of practically every stream used for irrigation, the protection of these forests from fire is of vital importance to water users throughout the West. Any decrease in their efficiency as water conservers affects directly the welfare of the water users below.

A striking point which has been shown by a study of the causes of fires is the large number of fires which are due to human agencies. Nearly one-fifth of all the fires on the national forests were due to care-

less campers and over one-tenth to incendiaries. One of the chief problems in the whole question of fire protection is to make the general public realize the seriousness of the fire menace, and to reduce the number of man-caused fires. Every water user has a direct personal interest in the matter, and can do much to assist the Forest Service in its work of fire control by helping to mold public opinion and to apprehend incendiaries. Not until the time comes when the man who sets fire to the woods, whether carelessly or maliciously, is looked at askance by the rest of the community will the solution be in sight, or will the water user be assured of the maximum supply of water and the minimum amount of damage from floods and erosion.

#### IRRIGATION AIDS FERTILIZING.

With irrigation farming it is possible to plow deeper and use larger amounts of manure than is possible in other kinds of farming, without danger of excessive looseness and drying out of the soil. This increased fertilization will in turn increase the water capacity, since the organic matter that is added is spongy and has a mellowing effect on the soil. The water capacity should be kept up, says W. L. Powers, of the Oregon Agricultural College, so that the soil will hold the greatest possible amount of rainfall and irrigation water received.

#### COST OF PUMPING FOR IRRIGATION.

Will it pay me to pump water for the irrigation of my farm? This is a question which has confronted thousands of farmers of the Northwest. There are numerous farms which need a small amount of supplementary irrigation. Can this irrigation be provided by pumping from deep wells or other sources and farming conducted profitably under such a system?

In Central Washington are large areas where only irrigation farming is possible, and the only source of water is from wells of varying depth. Inquiries constantly come to the Experiment Station as to how high a lift one can afford to pump water. The Experiment Station has attempted to answer these questions by the publication of Popular Bulletin No. 104.

This bulletin is the result of years of experience in these lines by Professor O. L. Waller, Irrigation Engineer of the Station. Professor Waller explains the problem in considerable detail and indicates in this bulletin just how one may determine whether it will pay him to pump water for irrigation purposes. It is pointed out that the question must be answered for each individual farm or farmer, inasmuch as a number of factors—such as feet of lift, character of soil, rate of evaporation, kind of crop, size of farm, market, ability of the farmer, etc.—are involved.

This bulletin will be of immense value to anyone and everyone pumping water for irrigation purposes. It may be had for the asking from the Experiment Station at Pullman. When applying for a copy please mention this paper.

# VETCHES

## New Crop of Seeds Now Ready

Write for prices also on all other Seed for Fall sowing.

Send for Catalogue of Grass Seeds, Trees, etc.—Full of Valuable

Information for North Pacific Farmers

## J. J. BUTZER

The Seed Man, 188 Front Street, Portland, Ore.

## PORTLAND WHOLESALE NURSERY COMPANY

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

#### SPECIALTIES

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.

Write now.

## Plant Pear, Walnut and Ornamental Trees

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## Grass and Grain Seeds

Farmers are planting heavily this fall. The demand is for the high quality that will give satisfaction. Our tests and the many testimonials are proof that we are supplying this want. We advise booking your orders as early as possible. Prices on proposed orders made on application.

## Aabling, Boyce Seed Co.

89 PIKE ST., SEATTLE, WASH.

## Milton Nursery Co.

#### WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

## Milton Nursery Company, Inc.

Milton, Oregon



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### SOME DAIRY PROBLEMS.

The Colorado Experiment Station gives the following helpful information, which we commend to those desiring to do good work in dairying, as observed from the question and answer point of view:

Q.—What are the chief causes of bad flavors in cream? A.—Strong-flavored weeds or feeds, insanitary surroundings, and undesirable bacteria.

Q.—Can sour cream be tested? A.—Yes; but cream in a sour or bad condition is much harder to sample and test accurately than sweet cream.

Q.—What standard of butter fat is required by the State law when cream is sold for table or private use? A.—Sixteen per cent butter fat.

Q.—What is first-grade cream? A.—First-grade cream shall consist of cream that is clean to the taste and smell, free from all foreign matter, and sweet or only slightly sour.

Q.—What is the best breed of cows to keep when cream is sold? A.—Holstein, Guernsey, Jersey and Ayrshire are the best four breeds. As to which of these four breeds should be placed first depends largely upon the owner's individual liking and the conditions that must be met by way of climate and feeds.

Q.—When should dairy herds freshen? A.—In the fall as much as possible, for it is through the winter months that cream brings the highest prices. Cream is more easily kept in good condition and labor for caring for the herd is cheaper at this time than any other season of the year. Records also show that cows freshening in the fall produce from 25 to 40 pounds more of butter fat in a year than the same cows freshening in the spring.

Q.—Are silos an economical factor in feeding dairy cows? A.—They are in reality a necessity, but they must be properly made and filled.

Q.—What is the best make of cream separator? A.—The one that will skim the closest, last the longest, run the smoothest, and be the easiest to clean thoroughly. Too much attention can not be paid to investigation before a purchase is made.

Q.—Is the Babcock test accurate? A.—Yes; if the method of operation is understood and care is taken to work it carefully.

Q.—What protection has the farmer against accurate testing? A.—He may make an occasional test of the cream himself at his own farm by following the instruction given.

Q.—Should cans be borrowed from cream stations or creameries? A.—Milk cans should not be borrowed from station operators or creameries, as in this way many cans are not only lost each year, but others are returned in damaged and unsanitary condition.

Q.—When should a patron expect pay for a cream delivery? A.—When a cream delivery is made and the empty can of that delivery is ready for return by the operator, the check for the previous delivery should be expected, together with a statement of the present delivery and the

price being paid for butter fat. By this method of payment the patron always has a check coming upon the day deliveries are made, excepting the first delivery at a station, and ample time is given the operator so that testing may be done accurately and carefully during hours that are not rushed with business. Patrons should insist that operators take plenty of time to do their work accurately and follow this method of payment, as such a plan is decidedly to the advantage of both parties concerned.

### HOLSTEINS FROM VALLEY VIEW FARM.

H. C. Davis, Granger Exhibiting Full Herd.

A full herd of Holsteins is being shown by H. C. Davis at Spokane, Walla Walla and North Yakima in this year's circuit.

In a recent letter Mr. Davis writes that the weather has been extremely hot during the time the show cattle should have been put in condition, but the heat was good for corn and alfalfa. A large part of this milking herd begins to freshen in September and on the whole is in excellent working condition.

Mr. Davis states there are a number of dairymen who are offering to sell their cows because of high price or prospective high priced feed. This of course is wrong and will result in nothing but the sacrifice of a lot of good cows and in the end a corresponding low price for feed, when the same men will pay a premium to again get stock in order to have a fair measure of return for their crops and labor.

Those who follow markets in their farming activities instead of planning and working ahead to meet the general market demand are at a disadvantage as a rule. The Holstein exhibit, as usual, is attractive at the fairs this season.

### SIRES IN DEMAND.

Some of the Recent Sales of Bull Calves by Carnation Stock Farms Include the Following Animals:

Rouble Segis Hartog No. 185570, to Mrs. J. B. Gregg, West Adna, Wash.

This bull is sired by King Segis 10th (8 A. R. O. daughters, including a 24-lb. two-year-old and a 26-lb. three-year-old). His dam, Margaret Rouble Hartog 2d, has an 18.80-lb. record at three years, testing 3.32 per cent fat. She is a daughter of Artis De Kol Walker, the best son of Beauty Pietertje (30.50) and Margaret Rouble Hartog (23.81) the dam of Abby Hartog Clothilde (31.39). Beauty Pietertje and Abby Hartog Clothilde head two of the seven combinations of three direct generations of thirty pound cows. This double thirty-pound combination on the dam's side with the blood of King Segis and Johanna Rue 3d's Lad on the sire's side makes a combination of breeding that is hard to improve upon.

Segis Pietertje Walker No. 185573 to Jess Rector, Chehalis, Wash.

## GUERNSEYS

### Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

HERMAN STEFFEN  
MONROE, WASH.

### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

A. E. SMITH CO., Sumas, Wash.  
(or White Building Seattle)

### Pure Bred Holstein Cattle

Our herd bull is Johanna Colantha Champion, grandson of Colantha Johanna, also grandson of Sir Fayne Concorda, full brother to Grace Fayne 2nd Homestead. His dam is Johanna Colantha, 26½ lbs. butter in 7 days. Her daughter J. Colantha 2nd made 32.85 lbs. butter in 7 days. His mature cows are making 28 to 30 pounds butter in 7 days, and his heifers without exception start with 17 to 20 pounds butter a week, good for 28 to 30 pounds mature cows.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

### A Rare Opportunity for High Producing Jerseys

I have decided to offer all of the calves that are born this year from my high producing Register of Merit cows, only excepting Olympia's Fern's offspring. Some of these cows are making over 800 lbs. butter, and others have already done so.

#### WHO IS OFFERING HEIFERS FROM 800-POUND COWS?

Look over the advertisements and then you will have to come here to find them.

E. L. Brewer

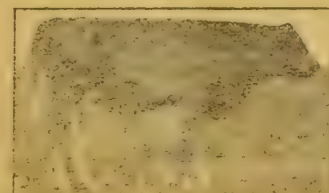
Satsop, Wash.

### Hope Farm Guernsey Calves

FOR SALE—Well marked, large Registered bull calves, from dams on official yearly test that will exceed 600 lbs. butter fat. May Rose and Glenwood families. The sire of our herd bull is from a cow with butter fat record of 505 lbs. and sired by a son of Glenwood Boy of Haddon, sire of 26 A. R. cows, from Selma of Pinehurst record 762.88 lbs. butter fat. His dam was first in her class at National Dairy Show and sired by Lord Mar, Grand Champion on the Island and at the National Dairy Show; also sire of 29 advanced registry cows.

H. B. DOUGLAS, Ferndale, Wash.

### REGISTERED HOLSTIEN BULL FOR SALE



Sired by a son of Sir Concordia Wild Rose De Kol, whose six nearest dams averaged 29.72 lbs. butter in 7 days. Health guaranteed. Good dairy type. His dam tests 4 per cent. He will make a valuable sire. Write for price and pedigree.

Firoaks Farm  
R. D. Wilson, Prop. R. D. 1, Tacoma, Wn



Another son of King Segis 10th whose daughters are making good in the advanced registry. His dam, Helena Walker Pietertje, has a record of 23.96 pounds at three years of age and is a daughter of Artis De Kol Walker and the 30-pound cow, Ruby Walker Pietertje, thus giving this calf two direct traces to the noted foundation cow, Beauty Pietertje on the dam's side.

Count Rag Apple Hengerveld No. 178542 to Joe Haight, Chehalis, Wn.

His sire, Rag Apple Korndyke 7th, carries 75 per cent the same blood as the \$25,000 bull, Rag Apple Korndyke 8th, and his eight tested daughters have made some very nice records as junior-two-year-olds. His dam, Maiden Princess 2d, with a record of 24.64 pounds butter, is a daughter of Sir Canary Mechthilde, the noted Canadian sire, whose 26 tested daughters include two with records of over 33 pounds butter in seven days.

### HOLSTEIN HEIFER'S RECORD

Molly Makes 993.4 Pounds Butter a Year in the Puget Sound Herd.

S. V. H. Molly, owned by Wm. Bishop, calved with her 2d calf the 18th of August, 1915, at the age of 3 years 8 months. She was put in test August 21st and for the first 30 days produced 2322.9 pounds milk and 104.1 pounds butter. Her best 7 day's production is 26.3 pounds butter.

This record was made during the hot dry months of August and September. She was then continued in the yearly test and 8 months after calving she broke the world's milk record in this class by producing 488.4 pounds milk and 18.2 pounds butter in 7 days.

She finished her year's work the 19th of August, 1916, and has to her credit 23,928.3 pounds milk and 993.4 pounds butter. These records are the highest in her class on the coast, and her stable mate, which she beat, stands 2d for milk and butter on the coast in the same class.

S. V. H. Molly's yearly record in the 2d highest in the world for milk in her class and her butter record ranks among the highest.

She made this large record by inheritance, as she is a daughter of the noted bull "Sir Veeman Hengerveld," 9 30-pound daughters and more above 29 pounds than any other sire. Her dam is sired by "Sir Korndyke Pontiac Artis," whose dam has a record of over 1100 pounds butter in 1 year and was one of the world's champions in her day.

We have a son of this great record heifer by the name of "Chimacum King Korndyke Sadie Vale," who is over 2 years old now and is being used on the daughters of "Sir Chimacum Wayne." Chimacum King Korndyke Sadie Vale is sired by King Korndyke Sadie Vale, whose first daughters have made records higher than the daughters of any bull in the world. The first 9 to be tested at an average age of 2 years 2 months have averaged over 23 pounds butter in 7 days. He is also the only bull with a 41-pound dam, a 40-pound sister on his sires side, and a 38-pound sister on his dam's side.—WM. BISHOP, Per John Van Trojen, Jr.

### WASHINGTON HOLSTEINS SURPASSING OTHERS.

Washington Holstein breeders have passed the breeders of all other states save New York in number of cows on test, according to a list issued by M. H. Gardner, superintendent of the Advanced Register. In this list there are fifteen or more states that were strong in this breed but, one by one, Washington breeders passed them, until finally there remained but Wisconsin, Ohio, Michigan and Minnesota. The Washington breeders continued to industriously add to their numbers on test until, as reported above, they are second only to New York state breeders. This report gives the records made by 569 cows. New York state, as would be expected, headed the list. Washington is next with forty-four cows, then comes the other great Holstein states in the order named: Wisconsin, 43; Ohio, 36; New Hampshire, 25; Michigan, 20. Thirty states in all are represented in the list.

### SILAGE FOR COWS.

As a means of furnishing succulence to dairy cows, silage is probably the best of anything that we have. It can be used all the year around with splendid results. The following are some of the reasons why dairymen use silage rather than furnishing succulence in other ways:

(1) The crop is harvested at much less cost than when a little is cut and hauled from the field daily, as in the case of a soiling crop.

(2) The crop can be harvested just when it will make the most and best feed.

(3) There is no danger of injuring the land while harvesting the crop because this is done when the ground is hard.

(4) It prevents the waste of any coarse stems, or stalks, that may not be consumed if fed in another form.

(5) It provides a feed that is very convenient to handle in any kind of weather.

Silage is now being successfully made in this state from any of the following crops: Corn, clover, wheat and vetch, oats and vetch, oats and peas, wheat, barley, barley and peas, barley and vetch, corn and clover, and clover and rye grass. Corn is the most popular in many districts because of the high quality of silage that it makes. In sections where corn can not be grown successfully, any of the other crops mentioned are recommended.—A. B. NYSTROM, Dairy Division, State College of Washington.

### THE SILVER BIRCH FARMS.

The Silver Birch Farms Company, at Newport, Washington, has enlarged its operations of pure bred live stock breeding very materially.

The personnel of the company is of a high order. Its capitalization is \$250,000 and it is a close corporation. Its officers are: Charles M. Talmadge, president; W. H. Wright, vice-president; C. P. Lindsley, treasurer; E. A. Lindsey, secretary. The directors of the company are: Charles M. Talmadge, W. H. Wright, C. P. Lindsley, Richard Parkhurst, of New York City, and Edgar A. Craver, of Boston.

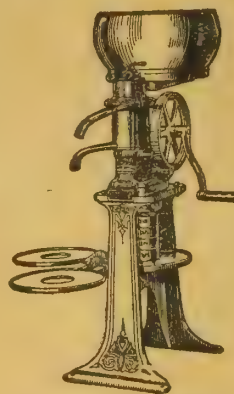
Jersey cattle and Berkshire hogs have received special attention and stock of outstanding merit have been raised. In Berkshires wonderful records have been made with Tips Cl-

### WAIKIKI FARM—A. J. C. C. JERSEYS

FOR SALE—Young bull now ready for service. Solid color, black tongue and switch. His sire is Fairy Glen's Majesty, whose dam is in R. of M. with 13,506 lbs. milk, 830 lbs. butter. Dam, Jenny Stephanie. She has a R. of M., Class AA test of 6880 lbs. milk, 469 lbs. butter as a four-year-old. This youngster is a good individual and should sire producers. We also offer several bull calves of excellent breeding. Write for pedigrees and prices.

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My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnar 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

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Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

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R. F. D. 1 Lynden, Wash.

### Holstein Bulls, World Records

The dam of my herd bull is Lutscke Vale Cornucopia, the world record milk cow. Young bulls for sale from this breeding.

E. W. McGEARY,  
Friday Harbor, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

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Farm near Tolt, Wash.



max, from Masterpiece; Laurel Champion, Marianne, Julia Lady's Third, Newport Duchess and many others.

The swine-breeding plant is ideally located and in the center of the area is a well-equipped feeding and breeding house with a capacity for 30 brood sows at farrowing time. Adjoining the central plant are the hog lots, fitted with individual hog-houses. The lots or fields are so arranged as to permit of a rotation of crops.

The Jersey cattle are largely from imported stock with a high capacity for milk and butter production, and Mr. Talmadge is developing the larger frame while adhering to the true dairy type, and has some high records to show for his efforts.

### BALANCED RATION FOR DAIRY COWS.

The feeding of a dairy cow should be governed by the cow's capacity to produce milk. By keeping a daily record of each cow's production, the skillful feeder soon finds that some cows in the herd respond to an increased allowance of feed and return a good profit on it, while others are limited in milk capacity and over-feeding them is unprofitable. Profitable feeding requires a thorough knowledge of the individual cows as well as of the values of feeds.

The following general rules are given in a new Farmers Bulletin of the U. S. Department of Agriculture, No. 743, "The Feeding of Dairy Cows," as a guide for winter feeding by the inexperienced feeder:

1. Under most circumstances the cow should be fed all the roughage that she will eat up clean, adjusting the grain ration to the milk production. Only when the cow tends to become overfat should the quantity of roughage be restricted.

2. A grain mixture should be fed in the proportion of 1 pound to each 3 pints or pounds of milk produced daily by the cow, except in the case of a cow producing a flow of 40 pounds or more, when the ration can be 1 pound to each 3½ or 4 pounds of milk. An even better rule is 1 pound of grain each day for every pound of butter fat produced by the cow during the week.

3. Feed all the cow will respond to in milk production. When she begins to put on flesh, cut down the grain.

For the most profitable milk production, the cow must be fed a balanced ration at the cheapest price such ration can be provided. By balanced ration is meant the combination of such a proportion of nutrients and in such quantities as the cow requires to maintain her bodily functions and as she can utilize in the production of milk. These nutrients are classified as protein, carbohydrates and fats. Protein is one of the principal constituents of milk; fats and carbohydrates perform much the same functions, that is, produce energy and heat, and in the balancing of a ration are usually classed together. If the cow is given a ration containing an excess of either element, the excess is liable to be wasted; hence the economical importance of a balanced ration.

Corn silage, corn stover, timothy hay, millet hay, prairie hay, hays from the common grasses, strays of the various cereals, and cottonseed hulls may all be classed as low in protein content, while legume hays, such as alfalfa, the clovers, cowpeas,

soy beans and oat and pea, are classed as roughage high in protein. Grain and concentrated feeds are the chief sources of protein, and the mixture should be made to fit the class in which the roughage belongs.

#### Compounding a Grain Mixture.

A few simple rules for making up a grain mixture are given briefly below:

1. Make up the mixture to fit the roughage available. With roughage entirely of the low-protein class the grain should contain approximately from 18 to 22 per cent of protein, while with exclusively high-protein roughage the grain ration need contain only about 13 to 16 per cent.

2. Select grains that will furnish the various constituents, especially protein, at the least cost, using home-grown grains if possible.

3. Be sure that the mixture is light and bulky.

4. The mixture should be palatable.

5. See that the grain has the proper physiological effect upon the cow.

All these suggestions should be kept in mind in order to obtain the best possible combination of grains.

### COOPERATIVE DAIRYING.

There are so many leaks in the dairy business that only by the use of the best business principles can it be made permanently profitable. Individual cows must each make a profit over the cost of feed; this can be determined only by weighing each cow's milk and the feed that she consumes. The old argument that the best cows are known may have some foundation, but few men know the poorest cows, and the latter go to make up the average as well as the good cows. No dairy is better than its average production. If this is too low, the herd is not paying a profit. Business principles must therefore be applied to lowering the cost of milk production. Efficiency is as much a necessity on the farm as in the factory. Few men feed their cows in proportion to the quantity of milk produced, yet what could be more simple and more nearly right? With little regard for her needs, feed is put before the cow in plenty if it is cheap and in less quantity if the price is high. Cows use about 60 per cent of their feed merely to keep their bodies working, and it is the quantity that is fed above this fixed necessity that furnishes the material for the milk. Too often the dairyman says, "I would do all the up-to-date things if I had the time." Can the storekeeper afford to run his business without keeping books? Yet that is what the farmer is doing.

#### Benefits of Cow Testing.

Working in cooperation, dairymen can obtain the benefits of business methods at a very small cost through the organization of a cow-testing association. An organization of this kind that hires an expert to determine the feed cost of milk or fat production for each cow in the herds of the members is easily possible. Such an expert travels from farm to farm, spending usually one day at a place. Each cow's milk is weighed and tested, as is her feed. An account is opened in the ledger for each animal and at the end of the year the profit or loss of each one can be ascertained. The heifers of good cows should be selected and the poor cows should go to the slaughterhouse, otherwise they may be the means of ruining the owner's

**FREE** to all owners of cows  
If you keep cows you ought to write for this book



**T**HIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

**"How a Dairyman Made Good"**—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

**"Year Around Feeding of Dairy Cows"**—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

**"How to Judge a Dairy Cow."**—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

**"Building Up a Dairy Herd"**—a practical breeder gives some sound advice on this important subject.

**"The Farm that Won't Wear Out"**—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

**"The Care of Cream on the Farm"**—quality is as important as quantity. It costs little and brings big returns.

**"Silos and Silage"**—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

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Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

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Three splendid young bulls, grandsons of Peter Pan, one a son of King Marcus. Their dams are heavy producers. Beautifully marked. For prices write

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business. A cow-testing association is a cooperative organization with local officers, and one that can be of use also for advertising the sale of cattle. The results obtained with such advertising have often been remarkable. Dairy men and breeders are certain to be interested in such a movement for the bettering of the business.

At present about 350 of the organizations keep the records for about 150,000 cows owned by about 7,500 farmers. These men are realizing the benefits of cooperation.

The dairy business is well adapted for cooperative organization, and concerted effort by dairymen usually means much greater profits on milk and cream through the elimination of waste, the application of more economical methods of production and manufacture, and the development of more productive cows.

### CARNATION HOLSTEINS.

Holstein Herald is the name of a neat and interesting booklet published by the Carnation Stock Farms in the interest of Better Dairy Cows, the need of which is proven by the reports of the many cow testing associations.

The answer to the question of Better Dairy Cows is to breed only to pure-bred sires. "Ten Good Reasons for Using Pure Bred Sires." is the subject of an article written by H. H. Alexander, which appears in this booklet, and will be highly appreciated by all dairy farmers who are striving to improve their conditions. When sending for a copy of this valuable booklet, mention this paper and do not delay, for the supply is limited. The address of Carnation Stock Farm is 1060 Stuart Building, Seattle, and their fine herd and farm is located at Tolt.

### GOOD SIRE POINTS.

#### Observations in Holstein Breed.

One essential in selecting a bull is a broad, high, open arch between the thighs, without which a well-placed, well-balanced udder is impossible. This important point is entirely overlooked by a majority of buyers, says E. A. Powell, Hoards Dairyman.

If an aged bull is being considered, the average records of all his daughters and granddaughters should be considered, as well as their individuality and uniformity, and not the records of a few made under abnormal conditions. A bull may get a 40-lb. daughter and yet be a poor sire. He may be the son of a 40-lb. cow, and yet be worthless as the head of a herd. He may get several 30-lb. daughters, and yet if the average of his get, or the per cent of 30-lb. daughters, is not high, he is not a superior sire.

The price at which a bull is supposed to have been sold, the offers that have been refused, the fee that may be charged for service, or the number of A. R. O. daughters in the list, are not evidences of superiority, unless the average records of his daughters are high.

If a 30-lb. sire is desired, he should have a high per cent of 30-lb. daughters in proportion to the number he may have in the A. R. O. list. If a bull is too young to have tested daughters, the same should be applied to his ancestors, which should

be seen, if possible, before purchasing a bull.

A sire may have more daughters in the list than any other, that being only a matter of opportunity, and yet be an inferior sire. Any bull of fair breeding, in the hands of a competent party and with an opportunity can easily have 100 or more daughters in the A. R. O. list, but that is no evidence of superiority as a sire. He may have six to ten daughters in the 30-lb. list out of 100 or more which have made A. R. O. records, only six to ten per cent, which is not a great showing in comparison with some of the sires which had a poorer chance, have had fewer tested daughters, but with a much higher per cent in the 30-lb. list.

Several young bulls, about which little has been said, have 20 to 36 per cent of the total number of daughters in the A. R. O. list above 30 lbs. each.

The most remarkable showing, of which I have knowledge, is the young bull, Prince Ybma Spofford 6th, bred by E. H. Knapp, from very superior ancestors, bought when young by Cornell University, sired in all 11 A. R. O. daughters. Of this 11, four, or over 36 per cent, have records from 30.16 to 32.65 pounds, at from 3 to 5 years of age, the average being 31.37 lbs. He also has two other daughters, 27.78 lbs. and 25.50 lbs., the latter as a junior four-year-old.

This bull and three of his daughters were slaughtered before their value was known, leaving him eight living daughters, four of which, or 50 per cent, have records over 30 lbs. each.

According to the last Blue Book, this bull stands far ahead of all others as the sire of 30-lb. daughters.

### COW VALUATION AFFECTED BY AGE.

According to investigations by J. C. McDowell, of the office of Farm Management, Holstein cows of all classes reach their maximum money value at 6 years of age. The values do not vary greatly between the ages of 4 to 8 years. After that age depreciation is rapid.

The estimates are about the same for Guernseys and Jerseys, though cattle in these breeds may reach their highest worth a little earlier, in some sections closer to the 5th year. Ayrshires are marked highest value at six years. In all the breeds the 4 year and the 8-year-olds are given about the same value on the market. Pure bred cows carry valuation into old age better than do grades for the season that their producing ability is better known.

#### NEXT W. W. HOLSTEIN SALE.

The next public sale of Holsteins by the Western Washington Holstein Breeders' Association is to be held at Mt. Vernon November 15th, 1916. Dairy men in the Pacific Northwest are looking forward to these sale events with much interest. General satisfaction, both to buyer and seller, has been the rule in the past, and members of the organization have in view the substantial development of the dairy industry in this part of the Northwest.

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### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

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High Grade Guernsey Bull Calf, from heavy milking cow with 5.5 test. First check for \$20.00 takes him.

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### Solid Fawn Jersey Bull Calf

Born Dec. 23rd, 1915. Dam imported and in Register of Merit with record of 9486 lbs. milk, 598 lbs. butter; full sister with record of 425 lbs. butter and another heifer by same sire now making above 50 lbs. fat per month with first calf. This calf is a good one.

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The first herd containing 17 head to finish their yearly records, which include six 2-year-olds, three 3-year-olds, and eight cows. Average for the lot, 20,223 lbs. milk and 828 lbs. butter. Five of the lot average 1020 lbs. butter and 25,340 lbs. milk for a year. The dams of our three herd sires average 26,247 lbs. milk and 1020 lbs. butter a year. Stock for sale, young bulls whose dams and sire's dams have large yearly records.

**WM. BISHOP**

**CHIMACUM, WASH.**

## WINTER FEEDING.

The problems involved in winter feeding of dairy cows, says Farmers' Bulletin 743, are usually distinctly different from those of summer feeding. Pasture (or green feed), usually the basis of summer feeding, is not available. Broadly speaking, there are two factors involved in this problem, first, to satisfy the needs of the cow and, second, to suit the pocketbook. The cow must have an ample supply of feed of a palatable nature, and this feed must be supplied at a price which will permit a profit on the feeding operation.

Viewed from an economic standpoint, there are some fundamental considerations which should first receive attention. In general farm practice it is advisable, so far as is economical, to use the feeds produced on the farm. Often the freight rates and the middleman's charges, if saved, will constitute a good profit for the feeder. This is especially true of roughage. Such feeds are bulky and in most cases must be baled at a considerable cost; the freight rates also are much greater in proportion to the nutrients contained than on the grains.

When land is high in price and the markets for dairy products are good, it is often impracticable to grow all the feeds on the farm. In such cases arrangements first should be made to grow the roughage, on account of the high cost of transporting these feeds. In most cases the prime object of the farm under such conditions will be to supply the greatest possible quantity of roughage.

It is a difficult problem to provide a system of winter feeding of

roughage which will make the best use of home-grown roughage and at the same time insure full production.

## THE TUBERCULIN PROBLEM.

Various dairymen's associations are being lined up to join in the movement to ask the state legislature of Washington to increase the appropriation for the tuberculin test to \$100,000 for the next biennium. The \$25,000 appropriated for the past two years have been exhausted and a considerable number of cattle slaughtered, some of which were badly affected while a considerable proportion were passed as good for meat by government inspectors for the reason there appeared to be no danger from any tubercular bacilli.

A number of business men were invited to witness the slaughtering of about 30 head of dairy cattle in Tacoma recently, which had been condemned as reactors. About half of them were in bad condition and it would not have taken an expert to determine beforehand which were badly affected. Medical authorities are generally agreed that if a cow can safely be passed for meat her milk, pasteurized, would also have been safe to use. The problem is to segregate the cattle which are in an affected condition from those not, a menace to the human health.

In this respect can we not take lessons from the leading dairy districts of Europe, where apparent ailment or suspect must be in evidence before the tuberculin test is applied. Proper control of this dreaded disease is essential, but too large an appropriation induces over ambition, and when dairymen are

unnecessarily sustaining losses from slaughtered cattle, more talent, common sense and less money might serve to solve the problem more satisfactorily.

## DAVIS HOLSTEINS WINNERS AT SPOKANE.

Mr. H. C. Davis, the famous Holstein breeder of Granger, Wash., entered 26 animals at the Spokane Fair and won 40 premiums against six competing herds. He won the Junior, Senior and Grand Championships on bulls. In addition he took all the firsts for herds and groups and carried off the banner for the premier breeder and exhibitor.

## FEEDING JERSEY COWS.

The Tennessee Jersey Breeders' Association are intelligently boosting their valuable cattle in a neatly printed pamphlet sent out by J. E. Morris, Secretary, at Nashville.

The Tennessee Jerseys are of outstanding merit in size and productive capacity. They are raised on lands rich in lime and productive of grasses. The balanced ration question is given careful attention by C. A. Willson, Professor Animal Husbandry.

Of the three points to be observed in the compounding of the ration for the Jersey the most important one is the one with regard to the "amount of feed." The cow that produces milk most economically is the one that consumes the most feed per thousand pounds live weight. We may make the statement another way by saying that no cow can produce milk economically except first that she have a capacity for the consumption of large amounts

of feed, and, second, except that she have that capacity satisfied to the limit through the supply of all the feed that she will consume. There is never any economy in supplying to a cow giving a full flow of milk less feed than she can consume. The cow's appetite should always be supplied to the limit with some kind of feed. There is never any economy in withholding feed from the cow. Every dairy cow requires a given amount of feed for simply maintenance purposes. Therefore, only such feed as is supplied over and above those maintenance requirements can be used for the production of milk. If the cow be given only enough feed to supply the maintenance requirements, it cannot be expected to manufacture milk, for there is no feed with which to manufacture milk.

The amount of grain that should be given will depend upon the "mount of milk" or upon the amount of butter fat that the cow gives. In general we may say that the amount of grain that should be given should be one pound of grain in winter for every three pounds of milk produced, and in summer one pound of grain for every six or seven pounds of milk produced. If the pasture be good, no grain should be given at all. Neither should a cow giving less than twenty pounds of milk per day be given grain while on pasture.

"The kinds of feed" fed will depend most upon their cost and palatability. Palatability of the feeds that are given the dairy cow is one of the most important considerations in the feeding of the dairy cow. This is especially true with regard to the rough feeds fed, for the larger



amount of rough palatable feed that the cow consumes the greater will be the economy of production, since the amount of milk produced will depend upon the amount of feed consumed above the amount required for maintenance. The most economical producing Jersey is the one that will consume the largest amount of feed and produce the largest flow of milk.

The greater the variety of feed stuffs there is in the dairy cow's ration the better will be the results.

#### GRAIN FOR THE SKIM-MILK CALF.

Calves are usually fed whole milk for two to three weeks, then gradually changed to skim-milk. About the time of changing, begin to feed a little grain, but do not think that it is necessary to use oil meal or any other high-priced feed, high in protein or fat, or both. Experience at the Missouri Agricultural Experiment Station shows that a mixture of two parts of corn and one part of oats, by weight, gives as good results as oil meal and ready-mixed calf meals often purchased at much higher prices. Bran is not especially good for the young calf, because it is too laxative. The grain mixture should be fed immediately after the milk, and neither should be fed too liberally or scours may result.—L. W. WING, Missouri College of Agriculture.

#### FEEDING COWS.

When a cow does not give 6,000 lbs. of 5 per cent. milk a year or 8,000 pounds  $3\frac{1}{2}$  per cent milk she is not as profitable as she ought to be. The various cow testing associations have set the high mark of 40 lbs. butter fat per month as minimum for the honor list. This measure of productiveness is equivalent to from 350 to 400 lbs. butter a year and shows capacity for a fair profit margin. Dairy men having cows of this class must see that they do not want for feed, for every particle of food above requirement for maintenance can be converted into valuable milk and butter fat.

Cows of the capacity above mentioned should be fed liberally, for as they are able to digest and produce above the requirement for their maintenance to such proportion are they profitable. Lutschke Cornucopia Vale required about the same amount for body maintenance as do cows which yield less than 7,000 lbs. milk, but she was able to digest enough more food to make over four times that amount of milk. At the regular market price of \$1.65 per hundred, her product was worth over \$412, while her feed cost was perhaps less than \$40 above that of a cow which only paid for her board.

Some cows when fresh make all the feed above maintenance into milk for a period of several months before they begin to lay on flesh; others, if fed heavily, begin to gain in weight soon after freshening. From the standpoint of economical milk production one can not generally afford to give a dairy cow more than she will consume without gaining in weight. There are times, however, when it is desirable to make exceptions to this rule; for example, practically all highly specialized milk producers in the early part of the lactation period lose in weight; that is, they produce milk

at the expense of their own body flesh. When such cows approach the end of their milking period they normally regain the flesh they have lost in the early part of this period. The feeder can, therefore, well afford to feed such cows liberally, being assured that the feed will be returned to him in the form of milk when the cows again freshen.

#### Individual Feeding.

Different cows have different capacities for converting feed into milk. For this reason the above-mentioned rules can serve only as indicators for the inexperienced feeder. No man who has not a full appreciation of the wide variation in individual cows will be fully successful as a feeder. Some cows may have natural capacity for producing large quantities of milk, and may not receive feed enough for maximum production. By increasing the feed of the highest producing cows and carefully consulting the milk sheets on which each cow's daily production is recorded, the skillful feeder will soon find that some cows in the herd will respond to the increased allowance and return a good profit on the additional feed given. On the other hand, there are cows that have a limited capacity for milk production and are very liable to be overfed. By carefully studying each individual cow the feeder will soon ascertain the point beyond which any addition to the grain ration becomes unprofitable.

## STOCK

#### FEEDING FOR BEEF.

Steers that are full-fed from birth should not be held beyond 20 or 22 months of age, because there is a decided falling off in the rate of gain. After this age the carcasses are overdone, there is an undue waste of excess fat and the gain in weight in proportion to feed consumed is much reduced as well as the gain per day per steer. These are the results secured in a recent test at the Missouri Agricultural Experiment Station in which some steers were full-fed while others received much less feed.

The most economical choice beef resulted from the use of a feeder weighing about 750 pounds, so-fed as to make a gain of 500 pounds. Such a steer will probably not quite top the market, but he should make the greatest possible profit to the feeder and furnish an economical carcass for the butcher and housewife and meat of a quality to please the most exacting. The carcasses show that of this 500-pound gain, 38 per cent is water, 49 per cent fat, and 12 per cent protein. When similar steers were fattened until they had gained another 500 pounds or gone from 1250 pounds to 1750 pounds, the carcasses were much overdone and the second 500 pounds was 76 per cent fat, 18 per cent water, and 5 per cent protein.

#### BRINE CURE FOR PORK.

As soon as the carcass has been properly chilled and cut up, it is ready for curing. Rub each piece with salt, sprinkle a layer of salt in the bottom of a good, tight barrel, and over each layer of meat as it is packed in tightly. When the barrel is full, cover the meat with a board and weight it down with a stone so

that none of the pieces can float with any part of the surface exposed to the air where it is likely to mould.

Make the brine by dissolving eight pounds of salt and two pounds of sugar in four gallons hot water. This will treat a hundred pounds of meat, and should be poured down the side of the barrel until the meat is thoroly covered. Four or five days after the brine is put on, the meat should be repacked in another barrel in reverse order so that the pieces which were at the bottom will be on top in the second barrel. Brine should be poured on as before, and the transfer to another barrel repeated in about five days, and this time it should be allowed to remain in the brine about a day and a half for each pound contained in the larger pieces of meat in the barrel, that is, a fifteen pound piece of meat should stay in the brine about twenty-two and a half days, then it should be washed in warm water and hung up for smoking just as in the case of dry-cured meat. It should be smoked with hickory, oak, apple or any other wood except that belonging to the pine family until it suits the taste of the user. About twenty-five smudges make a good, mild smoke.

Many prefer not to use saltpetre or borax, and they should be used in small quantities, if at all, for both tend to harden the lean meat, and saltpetre gives it a bright red color. Not more than an ounce should be used with each pound of salt. Borax helps to keep off the skippers, but this may be done by proper sacking. If used, it should be sprinkled lightly over the lean surface at the beginning of the curing or just after smoking, but not more than a tablespoonful should be used for a large ham.

Plain syrup, sorghum or honey may be rubbed on the meat after either the dry salt or brine cure has been completed, and pepper may be added if desired. After it is carefully sacked so that the flies cannot possibly get in, it should be hung in a dry, airy place until needed.—MISSOURI COLLEGE OF AGRICULTURE.

#### SILAGE FOR BEEF CATTLE.

Experience has determined that silage is the cheapest of many fattening feeds. At the Pennsylvania station gains made by corn silage, a little cotton seed meal, 100 pounds of gain was made at a cost of \$7 to \$8. In the irrigated districts, where alfalfa and corn grow so profusely, the need of a silo for beef production may not be so pressing, but when from \$2 to \$3 per hundred pounds gain can be saved there is a strong incentive to use silage, for with 20 head the cost of the silo would be returned in one season.

In the Coast Section the need of silos for beefing the surplus stock is more strongly felt. The young bullocks are kept growing and fattened on pasture, wheat-vetch silage and corn silage, with a little oil meal, cotton seed meal or grain during the fall and winter season, until matured sufficiently for market.

#### ROUNDING OFF.

When hogs are ready to fit for the market, or about 30 to 40 days before they are turned in is the time to increase the grain part of

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their ration, and the question always depends on availability, or relative value to produce gain and the cost. It has been determined that when corn is worth 80 cents a bushel that wheat is worth \$1.03 a bushel for hog feed, but pork may be produced more cheaply when a little tankage is used in connection with any kind of grain fed when rounding off. On one carload of hogs \$100 was saved by using some tankage.

#### WHEN TO HOG OFF.

Peas and oats should be hogged off when the last peas are nearly mature.

Corn is best hogged when the ears are well glazed.

When hogging off grain it will be found profitable to place a small self-feeder containing a high grade tankage, in the area grazed; thereby allowing the hogs to balance their own ration. In addition, the hogs should be allowed free access to salt and water.



## HOUSEHOLD DEPARTMENT

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## LOOKING AHEAD.

Let men who will bewail their fate  
And howl that life is sadness;  
Let men who choose in all their views  
Of this world see the badness.  
But when I've passed an hour of cares,  
It shan't come trailing after;  
I choose to see the joys to be  
The sunshine and the laughter.

Oh, life has griefs and life has cares  
And life holds many bad things,  
But day by day it sends our way  
A dancing stream of glad things.  
And I prefer to look ahead  
Where glow and fields of clover,  
Nor dwell too long on what is wrong,  
But drop it when it's over.  
—Edgar A. Guest in Detroit Free Press.

## CHARACTER BUILDING.

The denominational colleges have their advocates. The late James J. Hill made liberal contributions for their support during his last years, the reasons for which he stated:

"There is something about a denominational college that always appeals to me. It is a character-builder. I believe in keeping the boy in the religious paths of his ancestors. Too many young people are sent to the non-sectarian school. No one is by to guide them, and they gather a great many ideas that lead them astray. In the denominational college they stay by the old precepts and the foundations which were laid in the home are built upon to the great benefit of the student."

The evangelical denominations recognizing this fact will do well to unite and provide places outside the grounds of the large state educational institutions, where the students may dwell with the privilege of religious training. The state institutions are endowed with equipment of great value in training for efficiency but do not assume responsibility for religious training which is the foundation of character building.

## LUNCHES FOR SCHOOL CHILDREN.

The U. S. Department of Agriculture, through the office of home economics, has just issued Farmers' Bulletin No. 712, "School Lunches." This bulletin was prepared by Miss Caroline L. Hunt and Miss Mabel Ward, under the direction of Dr. C. F. Langworthy of the States Relations Service. The bulletin, after discussing the general principles of feeding school children to provide for activity and develop them into sturdy man-

hood and womanhood, gives a number of simple and appetizing menus for the school lunch basket and bills of fare and recipes for preparing inexpensive and nourishing noonday meals or hot dishes for children, either at home, on a school stove, or in the domestic science kitchen.

## Relation of Lunch to Other Meals.

In feeding a child or anyone else, the authors of the bulletin point out, it is not wise to think of any one meal apart from the other two. It is seldom convenient to provide at one meal all the materials needed by a growing body, and those which are omitted from one meal should be supplied by one of the other meals. The noon meal for children, however, where food must be prepared at home in the morning to be eaten elsewhere at noon, or where the children must hurry home, eat quickly, and then rush back to school, offers special difficulties and deserves the careful attention of parents.

The following suggested menus for the school lunch basket give the child as nearly as is practicable in such a meal, the proper proportions of the different classes of foods. This to serve as guide:

## For the Basket Lunch.

1. Sandwiches with sliced tender meat for filling; baked apples; cookies or a few lumps of sugar.
2. Slices of meat loaf or bean loaf; bread-and-butter sandwiches; stewed fruit; small frosted cake.
3. Crisp rolls, hollowed out and filled with chopped meat or fish, moistened and seasoned, or mixed with salad dressing; orange, apple, a mixture of sliced fruits, or berries; cake.
4. Lettuce or celery sandwiches; cup custard; jelly sandwiches.
5. Cottage cheese and chopped green-pepper sandwiches, or a pot of cream cheese with bread-and-butter sandwiches; peanut sandwiches; fruit; cake.
6. Hard-boiled eggs; crisp baking-powder biscuits; celery or radishes; brown-sugar or maple-sugar sandwiches.
7. Bottle of milk; thin corn bread and butter; dates; apple.
8. Raisin or nut bread with butter; cheese; orange; maple sugar.
9. Baked bean and lettuce sandwiches; apple sauce; sweet chocolate.

Taking milk to school in warm weather would be impracticable unless means were provided for keeping it chilled until it is consumed.

The school lunch container, the specialists point out, should permit ventilation, exclude flies, and should be of a material which permits thorough washing in boiling water. If glasses, paper cups or spoons are provided, the child should be warned against letting other children use them.

## TO MAKE COCKROACH POWDER.

The cockroach is a hard insect to destroy and success usually results from long, careful, persistent, treatment with either one of the better powders sold on the market for that purpose or with a mixture of three parts of flour with one part

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of plaster of Paris. Set this dry mixture in a low flat dish where the roaches can reach it and put a saucer of water beside it. Any roach that eats and drinks at these two dishes will cease to be troublesome. Powdered sweet chocolate mixed with equal parts of borax and scattered about cracks and crevices will also help to reduce cockroaches.  
—L. HASEMAN, Missouri College of Agriculture.

## DELPHINIUMS.

This class of plants is coming into great popularity in the Pacific Northwest. According to W. Saville, in Southern Florist, there are in cultivation many species, both annual and perennial, but the most important are the tall hybrid perennials. They are valuable for their wonderful range of lovely color and great variety in height, from one to ten feet. The colors range from almost scarlet to pure white, from the palest lavender up through every shade of blue to deep indigo; and for the variety and size of their individual blooms, some of which are single, some semi-double and some perfectly double, and all set on spikes ranging from one to six feet in height. About a dozen species have given rise to the cultivated forms.

The combinations in which they can be placed are numerous. They may be used in the mixed border, in masses of groups, in one or several colors, or associated with flowering plants or shrubs. Planted against a mass of evergreens they form a beautiful picture.

Delphiniums can be made to bloom for several months by continually cutting off the spikes after they have done flowering. If the central spike be removed the side shoots will flower and by thus cutting off the old flowers before they can form the base and keep up a succession of bloom. Another plan is to let the shoots remain intact until all have nearly done flowering, and then to cut the entire plant to the ground, when in about three weeks there will be fresh bloom. In this case, however, to keep the plants from becoming exhausted they must have a heavy dressing of manure, or applications of fluid manure.

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## GRAPE JUICE.

## A Reliable Method for Making.

Although the per cent of water is high, grape juice contains the same nutrients as other foods. It contains less water than milk, more carbohydrates, less protein, fat and ash. It is an energy yielding food. A good method of preparing it follows:

Select sound, sweet, well ripened grapes. Wash, pick from the stems, and put them into an enamel double boiler or preserving kettle over a slow fire. Mash with wooden spoon or wooden potato masher. Heat slowly about 15 or 20 minutes or until the seeds are freed from the pulp and skins are tender. The temperature must not be below 175 degrees Fahrenheit or over 200 degrees Fahrenheit. Lay a large square of cheese cloth, double thickness, over a bowl, turn in the grapes, tie the corners and hang to drip without pressure (if a clear juice is desired).

The next morning heat juice to boiling point. Pour into sterilized jars or bottles and seal with sterilized corks and sealing wax, if bottles are used. If jars are used adjust sterilized rubbers and covers.

This is pure grape juice. In serving dilute with water and chipped ice and sweeten slightly to taste.—MARY E. SUTHERLAND, Home Economics Specialist, State College of Washington.

## ASPIRATIONS.

Do not run after happiness, but seek to do good, and you will find that happiness will run after you. The day will dawn, full of expectation, the night will fall, full of repose. This world will seem a very good place, and the world to come a better place still.—JAMES FREEMAN CLARKE.

As unexpected flowers which spring up along our path, full of freshness, fragrance, and beauty, gladden us, so kind words, gentle acts, and sweet dispositions make glad the sacred spot called home.—AIDS TO ENDEAVOR.

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## POULTRY DEPARTMENT

For Information on Poultry Raising or Dairying write Poultry Editor, Box 1604, Tacoma, Wash.

### TRAP-NESTING VS. "HOGANIZING."

Merits of Two Systems to Be Determined at All-Northwest Egg Laying Contest.

Walter Hogan, of Petaluma, Cal., originator of the famous Hogan System of picking the layers, will be the guest of the State College of Washington at Pullman from October 1 to October 10 and during that time will handle as they arrive the representatives of the famous flocks entered in the All-Northwest Egg Laying Contest.

Mr. Hogan will handle every one of the birds entered in the contest before the contest opens and will predict how many eggs each will lay during the contest year. As every bird in the contest will be trap-nested during the year an interesting and helpful comparison will be made as to the relative efficiency of the Hogan system and trap-nesting.

For several years past a controversy has been waged between the trap-nesters and the so-called "Hoganizers." For the first time an official test of the comparative merits of the two methods of picking the layers will be made and applied to 1200 birds of all the varieties popular as egg producers.

Whether you are a "Hoganizer" or a trap-nester, you may enter a pen for a try-out in the contest.—HELEN DOW WHITAKER, Poultry Department, State College of Washington.

### POULTRY AT FAIRS.

The Western Washington Fair, Puyallup, had the usual very attractive poultry exhibit under the management of Fred A. Johnson, Wm. Coats, Vancouver, B. C., placed the awards. At these shows a large proportion of the visitors are always interested to secure information about the standard types of the different breeds and how to manage the flocks successfully for both pleasure and profit.

The experiences of the old time poultry raisers are valuable to beginners who want to succeed and particularly so this year, when egg prices are likely to remain at a high average for months to come. While feed is also high, poultrymen have made greater attempts to grow a larger proportion. The awards at this show on White Rocks went to Jack Martin, Puyallup, A. A. Giersch and Mrs. I. M. Dufred, both of Seattle.

On Partridge Plymouth Rocks to F. S. Hogman and Frank Kehn, both of Puyallup. On Partridge Bly. Rocks to Meadowbrook Poultry Farm, Vancouver, H. H. Collier, Tacoma, and Wm. P. West, Tacoma. On Silver Wyandottes to Mrs. Minnie Zimran, Tacoma, and Wm. Shepard, Sumner. On White Wyandottes to Washington Poultry Farm, Tacoma, and Meadowbrook Poultry Farm, Vancouver, B. C. On Partridge Wyandottes to Fred A. Johnson, Tacoma. On Buff Wyandottes to Fred A. Johnson. On American Dominiques, to Fircrest poultry Farm, Seattle.

On White Cornish to Meadowbrook Poultry Farm, Vancouver, B. C.

On Barred Plymouth Rocks to Kegley Bros., Little Rock, Wash., H. J. Doten, B. M. Sandback, L. J. Jacobson, all of Tacoma, Meadowbrook Poultry Farm, Vancouver, B. C., A. Carlyle, Orting, A. W. McCoy, Puyallup, and Fred A. Johnson, Tacoma. On White Orpingtons, G. A. Churchill and E. A. Niman, Tacoma, on Salmon Favorale. The Meadowbrook Farm had a choice display of ducks and gees. Poultry raising is on the upgrade, as a source of steady income.

### RATS IN CHICKEN YARDS.

Rats cause great losses in many poultry yards, but at the Missouri College of Agriculture we had no trouble in getting rid of them by poisoning with a mixture of two parts corn meal and one part sugar of lead. The hand should not come in contact with the poison feed and all other feeds should be removed so the rats cannot get them.

The poisoned feed may be kept away from the chickens by putting it in a tray, nailed to the middle of the bottom of a box at least a foot square and six inches high. The box should be closed on all sides except for a number of inch and a half holes bored through the sides near the bottom.

Burn or bury the dead rats so that chickens cannot eat them. The decayed flesh of even unpoisoned rats is likely to cause limber neck, as ptomaine poison is called in chickens.—H. L. KEMPSTER, Missouri Agricultural Experiment Station.

### FEEDING FOR EGGS.

Hensler Dodd, Whitaker State College, Pullman, Wash.

The hen that lays 150 eggs in a year needs about 1½ pounds of lime for egg shells alone. It is a very simple and inexpensive thing to supply this need. If shell at a cent and a half a pound is kept in a readily accessible hopper at all times, the need in this line will have been provided for. Oyster shell being more readily soluble than clam shell is to be preferred to it. A second choice is the so-called beach shell offered in western markets. Protein is found in both vegetable and animal foods. Vegetable protein is found in wheat, corn, oats, peas and all the green foods commonly used; animal protein in milk, beef and fish scraps. Vegetable protein in wheat, soy bean meal preparations, such as proteina, etc., should not wholly replace the animal protein. There is no safer or better animal food for poultry than milk. Thirty pounds of skim milk, twelve pounds of green cut bones, and eight pounds of beef scrap are about equal in feeding value. Skim milk may be fed either sweet or sour, but not be fed in first one form and then the other, as the combination gives rise to an acid that is quite apt to cause bowel trouble. Even where skim milk is placed before the hens as a drink all the time,

it is quite possible that they will not drink enough to give them all the animal food they need. A better way is therefore to sour the skim milk and make it into cottage cheese. After the first few feeds the birds may be given about all the cottage cheese mixed with four times the bulk of mash that they will eat up clean in an hour. Probably the best results in egg production will be obtained where fresh cut bone is fed about three times per week in quantity about a scant tablespoonful to the bird at a feed. The fresh bone may be best fed in a dry mash but the utmost care should be used to see that the mash is evenly apportioned among the birds so that each gets her share and no more and also to have the bone always fresh. The slightest taint or odor makes the bone a dangerous food, as ptomaine poisoning is apt to result.

The great problem in feeding for winter eggs is to supply sufficient protein without feeding along with it an excess of fat.

The hen fed on wheat alone was estimated to get enough fat to make three eggs along with one-half enough protein to make one egg. The same difficulty, in slightly greater degree, exists in feeding corn. Herein lies the value of sprouted oats as a feed. They are as rich in protein as wheat or corn, and less fattening. Dry oats unhulled, however, are a rather poor poultry food, as the hen is not able to handle the crude fiber largely found in the hull. Sprouting the oats softens the hull and seems to add to the digestibility and palatability of the grain greatly if the sprouting is well done. Badly done, it results in a dangerous feed. Oats will sprout out of doors, sprinkled with cold water, if the average temperature night and day is higher than 40 degrees. For lower temperatures an oat sprouter is recommended, although by the use of hot water the oats can be successfully sprouted with temperature down to the freezing point.

### POULTRY POINTERS.

Ample green feed should now be provided for the fall and winter months. Mr. and Mrs. Geo. R. Shoup in charge of the poultry department of the Western Washington Experiment Station are particular about having a sufficient quantity of succulent feed in the ration. The green feed, whether of roots, kale, clover or sprouted oats, is as necessary as the grain. Get the poultry houses in shape for handy caoring. Have the curtains in order for closing or opening in a moment's time. Then provide the 300 candle power lanterns and lengthen the day for feeding to about 14 hours.

The exhibit of poultry house construction and the feeding plan of the Western Washington Experiment Station at the Puyallup Fair was highly instructive and many intending poultry raisers will benefit by the lessons taught.

## MORE EGGS

When You Need Them Most



HIGH PROTEIN  
EGG MASH

Produces eggs in abundance. Fed in conjunction with Lilly's Chick Mash you'll be astonished at the result.

SOLD BY ALL DEALERS

Lilly's, Seattle

## H. L. BLANCHARD'S POULTRY FARM

BREEDING STOCK FOR SALE—Pedigreed Cockerels and two year old Hens; S. C. White Leghorns; Barred Plymouth Rocks.

All stock vigorous, healthy and of superior quality, as shown by our trap nest records. Satisfaction guaranteed. Call or write. Prices reasonable.

BLANCHARD POULTRY YARDS  
Chimacum, Wash.

## Cockerels EGGS

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Write for prices.

Single setting or lots.

FRED A. JOHNSON,

518 35th St.

Tacoma, Wash.

## Salmon Faverolls

Eggs for sale, from good stock of the best strain, at \$1.50 per setting of fifteen. They are great egg producers, good rustlers and very gentle.

Island Nurseries & Fruit Farm

S. J. Harmeling & Son,  
Vashon, Wash.

### CASE OF COMPULSION.

"Grandma wants to know, Susie, what makes you look so bright and cheery all the time," said Arthur.

"Why, I have to," said Susie; "You see, papa has been sick a long time, and mamma is tired out with nursing, and baby is fretting with her teeth, and if I were not cheery, who would be?"

"Yes, yes, I see," said dear old grandma, putting her arm around this little beam of sunshine. "That's God's reason for things; they are, because somebody needs them. Shine on, little sun; there couldn't be a better reason for shining than because it is dark at home."



# Livestock

## COW TEST PROGRESS.

The grade Jersey cow Pansy, owned by Murphy Bros., Montesano, was the highest producer of butter fat for the last reported month at the Montesano Association. Her yield was 81.7 lbs. butter fat. Mr. J. H. Taylor's Golden Massy Polo was a close second with 80.2 lbs. fat. Another of his cows gave 72.9 lbs. fat, and Mr. Brewer's Queen's G. Pogis produced 68.23 lbs. fat. Other owners of cows going above 50 pounds were: A. M. Valentine, Wm. Polson, A. G. Nillis, Oscar Smith, E. R. Brady and G. C. Collett. Those having cows yielding between 40 and 50 lbs. fat are Oscar Smith, Porter Bros., Parker Askeew, J. B. Gouchnor, Wm. Polson, Murphy Bros., A. M. Valentine, A. H. Arland, G. C. Collett and D. C. Simmons.

The testing work so seems to indicate that at least 12 per cent of the cows in the Montesano Association will go over 400 pounds butter a year while 18 per cent more are yielding a fair amount of profit. If the other 70 per cent were as good as these reported, the dairymen of Grays Harbor county would all "be in clover." They could all ride in automobiles without straining their credit, and that attainment is possible.

The cow testing association is the solid foundation and the next step in progress is the selection of better sires.

Nine cows in this list have been milked over 6 months. 27 have been milked 4 months or more, while the remaining 28 have been fresh less than 4 months. These figures bring up a point that is frequently overlooked—the really profitable cow is the one that will produce at a reasonable profit 9 or 10 months of the year rather than the "flusher" that makes a phenomenal record for 2 or 3 months when first fresh and then drops way down in her production. Persistence is a quality of great value in our dairy cows.

Mr. McKenna, the tester, reports that a number of the members of the association fed green feed quite successfully to supplement short pasture during the past month, this feed consisting of clover and a mixture of clover and some of the native and cultivated grasses. A man that depends on pasture as the sole source of green roughage, unless he has a pasture much above the average, should not expect the production from his cows that his neighbor gets who has cows of equal merit and supplements his pasture with some soiling crop.

### Clallam County Testing Association.

This organization has 27 members who have placed over 500 cows on test. The object of the association is to provide means of keeping individual production and feed records for each cow placed on test and to do the same at a minimum cost, through cooperation. These records will serve as a basis for intelligent improvements of the dairy business of the members of the association.

The farmers were assisted in making their organization by County Agriculturist McWhorter and O. E. Gibson, dairy field agent of the Western Washington Experiment station.

The officers are O. S. Govan, Presi-

dent; Edwin Pettit, Vice President, and Frank Holland, Sequim, Secretary, T. Laurensen, Treasurer.

### Puyallup Valley Tests.

Members of the cow testing association in the Puyallup Valley were emphatically reminded of the necessity of providing a sufficient amount of green feed right on during the lactation period. The showing for June was not up to the previous month. Those whose cows produced above the 50-pound butter fat mark for June were C. W. Orton, John Snell, A. Reise, W. J. Langdon, J. J. Miller, W. H. Snell, John Bumbach, and the county farm. There will probably be some wheat and vetch sown on any patches of ground available, in the early part of September and a good silage crop made available by the first of next June. Just watch the records of the cows in this association in June, 1917.

## YAKIMA CATTLE WINNERS.

### Corn Alfalfa Superior For Beef.

A shipment of Aberdeen beef cattle raised by the Congdon orchards of North Yakima was entered at the Iowa State Fair and in close competition the Washington corn-alfalfa fed cattle won four firsts and a grand championship. This is a surprise to cattle breeders in both states, as it is generally assumed that Iowa corn fed cattle are unexcelled. The corn and alfalfa of the Yakima Valley is acknowledged a superior feed by the Iowa breeders.

## HOG PROFIT FROM WASTE.

The Live Stock Journal of Portland commends hog raising on waste products so far as possible. In the Klickitat Valley, on one of the wheat stubble fields, 150 head of thrifty 100-lb. Duroc shoats were contentedly feeding and putting into the manufactured article waste product. In the adjoining field there were no hogs. Here was a direct waste of several hundred dollars. The owner of this farm wouldn't deliberately throw away one hundred dollar greenbacks, but he was virtually doing so by his treatment of this stubble field. A little further on we ran across a field containing many grade hogs. Their breeding was bad, and when they come to the market they will not bring within one-half cent a pound of the prices which will be paid for the pure-bred Duroc Jerseys in the first field.

## ZEROLENE AT THE FRONT.

The local Standard Oil agent recently received from J. E. Balsley, district sales manager of the Standard Oil Company at Phoenix, a report on the operation of the government automobiles and trucks along the Mexican border.

"A great many of these machines," writes Mr. Balsley, "are being lubricated with Zerolene oil. The intense heat and great amount of low gear work necessary in the sand make perhaps the best test possible of a motor oil. I am glad to report that Zerolene is doing the work in fine shape. Due to its asphalt-base origin, it keeps its lubricating value under the most trying heat conditions, and none of the machines have been at

all bothered with carbon deposits in the cylinders."

## LIVE STOCK MARKETING.

Farmers find they can organize live stock shipping associations in a community where considerable live stock is available for shipment at different times, for their mutual benefit. In this way the farmer can market his stock when it is ready instead of compelling him to wait until the local shipper is ready to buy it. He obtains for himself the benefits of the cheaper carload transportation, and the shipments of the association realize for the owner the market price of his stock less the actual cost of marketing. In particular, it has been found that when thin stock, calves or lambs are sold in small numbers, the local price is usually very low. It is on this class of stock that the associations have been able to save their members the most money.

In some places on the Pacific Coast the auto truck has come into good service in marketing live stock. When young cattle or hogs are ready they are transported to either the Portland, Puget Sound or the Spokane market, when within hauling distance. It is for the railway shipments the associations serve a needed purpose.

The market prices for cattle, hogs and sheep are now very fair, the main point is to get the stock well fitted. When an animal is intended for the block he should be kept in a condition to gain about a pound in weight a day on feed obtained at lowest possible cost. Until half grown it should be largely of the bone and flesh forming ingredients and at a month before turning in,

use such grains as will put on some solid fat. Always feed abundantly when the aim is marketing, for the only business such animal has living is to make gains, and it is unprofitable to put him out of business, even for a minute.

## WORMS IN HOGS.

### Preventive and Cure Formulas.

(Recommended by U. S. Department of Agriculture.)

This should be placed in boxes 12x12x4 inches and kept under cover before the pigs at all times.

|                       |        |
|-----------------------|--------|
| Common salt .....     | 3 lbs. |
| Glauber's Salts ..... | 3 lbs. |
| Salsoda .....         | 3 lbs. |
| Copperas .....        | 3 lbs. |
| Sulfur .....          | 1 lb.  |

Professor Hislop recommends the following formula for hogs infested with worms:

(Dose for 100 lb. pig.)

|                           |          |
|---------------------------|----------|
| Santonin .....            | 5 grains |
| Calomel .....             | 2 grains |
| Areca Nut .....           | 2 drams  |
| Sodium Bi-carbonate ..... | 1 dram   |

The herd should be divided into lots of 6 to 10 head and weighed, and the drugs apportioned accordingly. For example, if one lot of 10 hogs weighed 1000 pounds, it should receive ten times the above dose. The hogs should be kept off feed for 12 to 18 hours previous to giving treatment. In the morning mix the drugs into a slop of shorts and give to the hogs. In the evening of the same day give the dosed hogs a bran mash. This will flush out the worms. Gather all the expelled parasites and burn them.



## JERSEY COWS AND BANQUET

A cow barn, clean enough for a dining room, is demonstrated by Thomas S. Griffith, of Glen Tana farm, Spokane, Washington.

Mr. Griffith is very particular about two things, cows and sanitation. He breeds pure-bred Jerseys, for he caters to a discriminating trade which demands milk that is rich in fat and food nutrients. He rides his hobby of sanitation hard, for he is making certified milk, much of which is used by infants and invalids, and "quality first" is his motto.

Mr. Griffith produces his milk in

three large concrete barns, each of which houses 100 pure-bred Jerseys. Light, airy and sanitary, the barns are models of dairy building construction.

Recently the owner conceived the idea of giving a banquet to a number of his friends and a deputation from Spokane in one of the barns. Covers for seventy guests were laid at long tables in the center alleys and the cows looked on, interested spectators of the feast. Furthermore, these queens of the dairy proved themselves well-bred Jerseys; their behavior during the banquet was most decorous.





Our First Prize Holstein Herd at Western Washington Fair, Puyallup, Washington, 1916.

Prosperity outlook for the dairy industry is better at the present time than ever before. We must continue to have butter, milk and beef.

Our population has increased more rapidly than our ability to produce the needed supply. Consequently, prices are rising and in the near future we must expect to pay more for dairy products than we ever have done in the past. The available number of dairy cattle is not sufficient to supply our needs at home, proven by the active demand from all over the United States for the Black and White cow. Europe has depleted her herds and today the value of a dairy animal is far greater than ever before. After the war, Europe must

come to us for her stock to build up the industry. This will mean that the first class Holstein Friesian cow will bring more money than she has ever done. The price of dairy products will have to rise for the demand will be greater. Now is the time to purchase your Holstein Friesian cattle!

Why **HOLSTEINS**? Because the Black and White breed hold practically all the world's records for milk and butter production. The per cent of profitable animals is greater than any other breed. The Black and White cow leads them all!

When you desire first class Holstein Friesian dairy stock call and inspect our large herds or drop us a line.

## VAN WOERDEN & FISHER

Thomas, Wash.

Midway Between Seattle and Tacoma

### TUBERCULOSIS DIAGNOSIS.

An important contribution has been made by Professor C. A. Magoon, Bacteriologist of the Washington Experiment Station at Pullman, from the results of this work just published in general bulletin No. 132 of the Experiment Station. As a result of these observations, improved methods of cultivation of the tubercle bacterium have been worked out under such conditions as seem to give promise for the perfection of a reliable method for the early diagnosis of the disease.

Professor Magoon's bulletin is merely a preliminary report of his work, which is being continued along this line, and while he makes no claim to having solved the problem, there can be no doubt that he has made a very valuable contribution in this connection.—IRA D. CARDIFF, Director.

### THE MEAT QUESTION.

The United States is the greatest meat eating as well as the greatest meat producing nation in the world. Approximately twice as much meat is consumed in this country as in Germany before the war, and the total normal consumption in Russia, Great Britain and France is less than in Germany. The per capita consumption is also far greater in this country than anywhere else with the exception of Australia and New Zealand.

Our own exports now consist largely of pork and pork products and these are derived to a great extent from corn. In the fiscal years 1914 and 1915 we imported more fresh, chilled and frozen beef and mutton than we exported, and more beef of all descriptions was imported in 1914 than was exported. In this limited respect we have joined the great majority. Practically the whole of the world's export trade in meat is maintained by nine countries: Argentina, Australia, Canada, Den-

mark, Mexico, under normal conditions, New Zealand, the United States and Uruguay.

### BETTER BREEDING.

High cost of land and expensive feed are the great impelling forces which compel farmers to turn away from the kind of live stock which have no adequate power of digestion; in other words, the range, scrub class of animals which do not turn their feed into some measure of profit. It is the experience of leading stock raisers and of experiment stations that bigger profits are realized by using pure bred sires. In the Pacific Northwest the farmers are realizing more fully each year the value of using a good pure bred sire of some beef breed for beef raising, as do the leading dairymen value the importance of a pure bred sire of a dairy breed for their purpose. Here are some of the points enumerated by the Missouri Experiment Station:

#### The Pure Bred Sire Means

1. Uniformity.
2. Individual superiority.
3. Early maturity.
4. More marketable stock.
5. More money for your feed.
6. Credit to the owner.
7. Bigger profits.

#### The Scrub Sire Means

1. Lack of uniformity.
2. Mongrels and misfits.
3. Late maturity.
4. Poor market demand.
5. Less money for your feed.
6. Discredit to the owner.
7. Loss and dissatisfaction.

These are some of the facts which explain why a survey of the live stock producers shows that those who are producing the good stock are the ones who stay in business when so many others are dropping out.

From the breeding standpoint the important steps are (1) the use of tried pure-bred sires, (2) proper feeding of breeding animals, (3) careful

culling of barren and poor-breeding females, and (4) replacing culls with the best females in each season's produce.

Since it costs little or no more to produce an 8-cent steer than it does to produce a 5-cent steer, the profits to be derived from producing live stock on corn belt farms is limited by the quality of the animals. Good sires must be secured and the herd must be carefully culled.

#### Significance of Pedigrees.

Discussing constructive breeding as applied to breeders, but also of value to the wide-awake stock raiser, Prof. William Hyslop, of the Washington State College, says is essential to value pedigrees for what they are actually worth.

"In my estimation," he states, "there is nothing incompatible between a good animal and a good pedigree. It is not to be understood that pedigree is being emphasized; individuality undoubtedly comes first, followed by pedigree. A combination of the two is best in all cases. Not all well bred animals breed true to type; a predictable percentage of poor individuals is to be expected from all well bred animals. In fact, it is to be marvelled at that there are not more mediocre animals descended from individuals with good pedigrees. The main thing is not to expect too much of the pedigreed animal. Those who have expected too much have failed to appreciate the important places which good management and proper development, the result of liberal and judicious feeding, have played in the development of improved types of livestock. Pedigree alone cannot work such wonders. It must be backed up by judicious management.

### TIME FOR COURTESY.

Are you going to the boat? Well come right into this car, I am going near by the pier where the steamer

leaves for San Francisco. That was the question asked and the invitation extended by Mr. Chas. H. Lilly, Seattle, president of the busy company bearing his name, to some strangers who were carrying hand baggage for an ocean trip recently. In a few minutes his guests were unloaded at the dock and his machine again spinning rapidly towards his office.

How can you take time from your business to render such courtesies inquired our representative. With a pleasant smile Mr. Lilly said: "In the early part of my life I made it a habit to be helpful and obliging wherever opportunity affords and now it is one of my great pleasures to take the time for little surprises of this kind.

The writer was impressed with the lesson. Life can be made a drudgery while we are waiting for some future date to express any goodly measure of our generosity. How much sunshine and pleasure is often missed for ourselves and happiness withheld from others when we fail to take time to be courteous.

The investigations of the Department have shown that it is commercially practicable, by the method of candling, to eliminate from any given shipment most of the eggs of the kinds which the Department regards as adulterated. Country shippers who are not certain of the freshness of their eggs should candle them before shipping them in interstate commerce.

### BIG HOLSTEIN SALE.

Herd of 38 Pure Bred Holsteins  
Sold by Tyson and McKelheer to  
Bitter Root Valley Holstein Co.

Through our advertising in your paper, the Northwest Horticulturist and Dairyman, writes Mr. B. D. McKelheer, manager of the Moxee Valley Holstein Farm, I have sold 38 head of Holstein cattle to Messrs. M. E. Wooster and Frank M. Edes,



of Corvallis, Montana, who have now form the Bitter Root Valley Holstein Company, and will devote their time to the breeding of Registered Holsteins. Included in the lot sold them was our record cow, Fairview Homestead Burke, with 585.5 lbs. milk and 29.3 lbs. butter in 7 days, also a number of our high testing cows and well bred heifers. They have an excellent foundation stock, and with good judgment in the selection of future herd sires they are sure to be of great benefit to the dairymen of the Bitter Root Valley, and deserve to be well rewarded in future patronage. The officers of their company are: M. E. Wooster, President, F. M. Edes, Secretary, G. L. Parmelee, Treasurer, and E. E. Jennings, Manager, at Corvallis, Montana.

### HOLLYWOOD HOLSTEIN SALE.

Editor Northwest Horticulturist and Dairyman: In the certified barn on the Hollywood Farm, Hollywood, Wash., owned by Mr. F. S. Stimson, there are accommodations for 97 head; every stanchion is full, and there are 23 cows on the outside, and more soon to freshen. There are now 145 cows in the milking herd, and as this is all the farm will accommodate Mr. Stimson decided the best way to dispose of the surplus was to hold an auction sale, where every one would have an equal opportunity to get what they wanted at their own price. Elsewhere in this issue will be found an "AD" for this first sale, which, if plans do not miscarry, will be an annual event. There are to be several innovations in this sale. The most important is the protection Mr. Stimson will give the buyer. He absolutely guarantees all animals purchased at Hollywood Farm to be free from tuberculosis, and more than this, he gives a written guarantee that they will not react in 60 days thereafter. Another is a guaranteed cash bonus for official testing. The reason the Hollywood Farm wants the buyer to test is that they will derive benefit from the record which will go to the credit of their herd sire, inasmuch as every animal offered in this sale has been bred and raised on Hollywood Farm. They also realized there might be some buyers who would not care to test, hence the cash bonus as an incentive. This is a new feature in a sale ring, and one that will be watched with a great deal of interest.

There will be absolutely no inferior stock offered, and this should be another incentive to those who would care to purchase animals that are above the average in cleanliness, individuality and breeding. In fact, most of the animals have not as yet had an opportunity to show their ability, as fully 50 of the females to be offered have yet to freshen with first calf, and those that have freshened have been placed in official test and have proven that they are producers well above the average.

In placing this 70 head in their first annual sale the Hollywood Farm is making a precedent, so far as I know personally, that has not been established by any other herd, that is, all their offerings have been bred and raised on the home farm.

The Hollywood Farm has set a high standard, not only for the certi-

fied milk products, but, in fact, every article leaving this farm is of an equally high standard. Nowhere in the East can you go and purchase this class of stock with the same degree of protection and self-satisfaction, that the animals are coming from a herd that stands absolutely above reproach, and an owner whose reputation for square and honest dealing is so well recognized.

The Holstein cow stands in a class by itself, being unapproached by any other dairy breed, not only in butter fat production, but shows 20 per cent higher milk production. The milk dealers on the Sound are now offering 12 months' contracts at \$2 per 100 for milk. Our dairy products are being demanded all over the world, and never before have we approached a winter when the dairy business looked so encouraging. It is now time for the farmer and dairyman to sit up and take notice; and if the right kind of animals are used no department of the farm will pay so well.

It will pay you well to remember the date of this sale, Saturday, October 21st, at Hollywood Farm, and make arrangements to attend one of the cleanest sales held on one of the world's greatest dairy farms. Take advantage of this opportunity to visit Hollywood Farm, one of the truly great farms of the world.—GEO. A. GUE, Sales Manager, North Yakima, Wash.

The National Dairy Union is putting on an advertising campaign to increase the consumption of pure milk and butter.

Don't wait too long before placing an intended order for a good sire of your chosen breed. Breeders are offering some good ones at far less than their actual value, and according to the good work of the cow testing association the best sires are now being bought quite freely.

### GRASS SEEDING.

The advantage of fall sowing of grass seeds on the upland soils of the Coast section in the early fall is that crop can be secured next year, and it is nearly a year ahead for pasture. On logged off land wherever there are some open places that grass seed can be sown just before a rain and covered, a mixture of grass seed should be sown to provide needed pasture for dairy cattle.

Here is a good mixture of seeds for upland soils as recommended by the Western Washington Station bulletin: The proportion is 3 pounds each of Italian rye, English rye and orchard grass, 2 pounds each of fall oats, sheep fescue and white clover, 1 pound Kentucky blue grass and 4 pounds red clover, which is sufficient for an acre.

For moist or low land red top and alsike clover seed should be added, using less of the English rye and of red clover. Wherever land is available get the seed and manage to stir up the ground between the stumps somehow so that when seeded just before an early fall rain, the mixture can easily be covered.

Those who have meadows where the grass is becoming depleted should plow up and re-seed or additional seeding may be done later in winter at the time of the heaviest rains. In such cases some of the seed is lost, but the proportion which does grow

## 25 Per Cent. Discount

I will allow a 25% discount on all orders for nursery stock accompanied by the cash received before October 15.

A complete line of fruit, shade and ornamental trees, roses, shrubbery, etc.

Instead of putting agents on the road, I will give their commission to you.

Satisfaction guaranteed in every respect.

**RICHMOND NURSERIES**

RICHMOND BEACH  
WASHINGTON

usually pays well for the labor and money expenditure. Nothing is more essential to successful dairying than good pastures.

### GUIDES THAT HELP.

We have not wings, we cannot soar,  
But we have feet to scale and climb  
By slow degrees, by more and more  
The cloudy summit of our time.  
The world may sound no trumpets,  
ring no bells;  
The book of life the shinging record  
tells,  
Thy love shall chant its own beatitudes  
After its own life working. A child's  
kiss  
Set on thy sighing lips shall make  
thee glad.  
A sick man helped by thee shall make  
thee strong.

It is hard to fail, but it is worse never to have tried to succeed. In this life we get nothing save by effort.—Theodore Roosevelt.

Hard work is still the road to prosperity and there is no other.—Benjamin Franklin.

### COURTESY.

"The fact that courtesy is the cheapest commodity on the market is only one of the reasons it should be used liberally on all occasions.

"There is only one time to be courteous—that's always. The time when it is hardest to be courteous is the time when it is most needed.

"Strong men can always afford to be gentle. Only the weak are intent on giving as good as they get. Loss of temper gains nothing. Remember your greatest asset is courtesy. Try it.

"Every smile of satisfaction that you bring to a patron's face is a cash asset to us—and to you. Cultivate courtesy for what it means to you."

The value of courtesy is here regarded merely as a cash asset. Of course that is only a part of the truth. Courtesy is a social lubricant. Without it, human relations groan like an ungreased axle. Courtesy is only one remove from goodness, and not always that far, even.

A big railroad system, in whose publication this appears, suggests to try it.

The dairy cattle shown at Western Washington Fair were rather limited in numbers, but the quality was good. The valuable Guernsey herd of Dr. Park Weed Willis, Holsteins owned by Van Woerden & Fisher, John Snell and Adam Carlyle; also Jerseys owned by Mr. Charles Richardson, Tacoma; W. D. Buchanan, Spanaway, and F. W. Cornwin, Puyallup, were exhibited and attracted much attention from the large crowds.

## STAR BARN EQUIPMENT



STALLS and  
STANCHIONS

Litter and Feed  
Carriers

Strong. Practical. Durable.

Write for special Catalog.

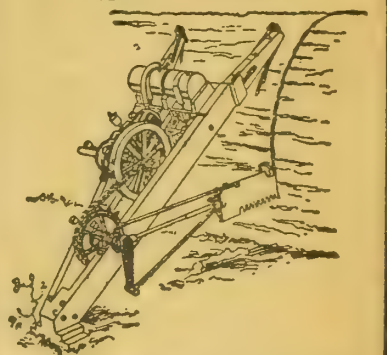
Everything for the Dairy, Cheese  
Factory and Creamery.

**Dairy Machinery Co.**

907 Western Ave. Seattle, Wash.

## GET NEXT TO THIS

20 CORDS IN 10 HOURS  
LIGHT WEIGHT  
PORTABLE DRAG SAW  
3½ H. P. ENGINE



Chain Drive, can be used in any position. Bad weather does not hinder operation; one man operates it and moves it on the log; two men can carry it anywhere.

Write for complete information.  
Simplest, Strongest, Lightest and  
Fastest Drag Saw Built

**D. MacGREGOR**

80 Marion Street, Seattle, Wn.

## FORDS

We have the largest stock on the Coast—20 machines at the present time to offer, all guaranteed, at \$275 to \$350 each. Easy terms.

**SOUTH TACOMA AUTO  
BROKERAGE CO.**





The first step in stump blasting; making hole under the stump.



Loading sticks of Giant Stumping Powder in hole under center.



Giant Stumping Powder left the stump ready for easy handling.



## Save money on your stump blasting

The explosives that get stumps out cleanest and cheapest are those that have a heaving and lifting effect, shattering the stumps just enough to break them up. Then you can handle them easily.

"The farmer," says an Experiment Station, "should use an explosive prepared especially for his work; one that stands all ordinary shocks of handling and transportation and does not easily freeze. He does not need and should not use the expensive nitroglycerine explosives." Thousands of farmers have taken this advice and have found that

# GIANT FARM POWDERS

## STUMPING — AGRICULTURAL

always save them money because they go further than any other stumping powders. Also, because they are made especially to suit *western* farm and orchard conditions and because they are always uniform in composition and action.

Giant Farm Powders—the product of the oldest manufacturer of high explosives in the United States—are the only genuine "giant powders" for agricultural use. They are made in two brands—Giant Stumping Powder and Eureka Stumping Powder.

Giant Stumping Powder is the ideal explosive for blasting stumps in wet ground. It keeps perfectly for months, resists water and chilling, and gets the stumps out economically.

Eureka Stumping Powder is the money-saving, low-freezing explosive for blasting stumps in dry soil. It costs less than Giant Stumping Powder and careful blasters save many dollars by using it for wet work also.

### EVIDENCE

I bought five boxes of your Stumping Powder and now I want to sell a lot of other powder that I have.

RUDOLPH STADELI, Silverton, Ore.

Your Stumping Powder has a wide breaking power and less fumes to contend with after being exploded than any other on the market.

G. L. METZGER, Hillsdale, Ore.

In using a thousand pounds of your Stumping Powder neither I nor any of my men had the least bit of trouble in getting the very best results. I have used practically every powder on the market and find there is more strength in yours.

J. L. EIDSON, Silverton, Ore.

Your Stumping Powder shoots the roots and spreads wide in the ground instead of going down. It is the best powder we have used.

G. S. McCARTNEY, Russellville, Ore.

I find your Stumping Powder all you claim for it.

ELI CLINKER, Camas, Wash.

I am a large user of powder in stump blasting as well as in grading roads, breaking boulders and making ditches. I get good results from the Giant brands all the time.

MICHAEL HARVEY, Charleston, Wash.

Giant Stumping Powder gives good results when all other means of removing stumps have failed.

ROBERT CHABOT, Moclips, Wash.

### Make This Test

You want to clear your land as cheaply as you can. If you are not using Giant Farm Powders, try them *now*. Mark and mail the coupon at the right. We will have our nearest distributor supply you—at the lowest market price—with a 25-pound or 50-pound case of Giant Stumping Powder or Eureka Stumping Powder. Compare this with any other and *prove* for yourself that Giant Farm Powders will save you money, time and work.

#### We Issue Five Valuable Books for the Farmer

They tell and show how to remove stumps and boulders, how to increase the fertility of the farm by blasting the subsoil, how to have earlier-bearing, thriftier orchards by blasting holes for trees, and how to drain your land by using Giant Farm Powders. These books are written especially to cover Pacific Coast conditions, and will be helpful to every farmer. Choose the books that you prefer and *mark and mail the coupon*.

THE GIANT POWDER CO., Home Office: SAN FRANCISCO  
CONSOLIDATED "Everything for Blasting" ESTABLISHED 1866

DISTRIBUTORS WITH MAGAZINE STOCKS EVERYWHERE IN THE WEST

Tear out and mail this coupon NOW  
—before you forget it



### FREE BOOK COUPON

The Giant Powder Co., Con.  
206 Kohl Bldg., San Francisco.

Send me your illustrated books on the subjects which I have marked X.

- |                                           |                                         |
|-------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Stump Blasting   | <input type="checkbox"/> Tree Planting  |
| <input type="checkbox"/> Boulder Blasting | <input type="checkbox"/> Ditch Blasting |
| <input type="checkbox"/> Subsoil Blasting |                                         |

#### Trial Order Blank

(Kindly fill out if ready to purchase)  
Have your nearest distributor supply me with

..... lbs. Giant Stumping Powder  
..... lbs. Eureka Stumping Powder

NAME .....

ADDRESS .....

Write below your dealer's name.



# NORTHWEST HORTICULTURIST & DAIRYMAN

Top Station  
URBANA ILL.

POULTRY  
AGRICULTURE, STOCK & HOUSEHOLD

Twenty-ninth

TACOMA AND SEATTLE, WASH., OCTOBER, 1916

No. 10

## MARKETING LIVE STOCK AND MEATS.

Marked variation in methods of marketing meat animals in different sections of the United States and in methods of marketing different classes of animals in the country as a whole has been found by specialists of the U. S. Department of Agriculture from a survey of the live-stock marketing conditions of the country. The data obtained by the survey have been published as Part V. of a report of an exhaustive study of the meat situation in the United States.

The three general methods of marketing found to be in most common use are:

Shipping to the large centralized markets, selling to local butchers and packers, and the sale of farm-prepared meats to dealers or consumers. The bulk of the animals from the Central States, it was found, is sold through the centralized markets, while some form of local marketing predominates in the extreme eastern, western and southern sections.

The great central markets handle four-fifths of the sheep and lambs, two-thirds of the hogs, and approximately one-half of the beef cattle. For local slaughter about one-third of the beef cattle, one-eighth of the sheep and lambs, and one-twelfth of the hogs are sold. Nearly one-third of the hogs and about one-tenth of the beef cattle and one-twentieth of the sheep and lambs are slaughtered on farms and ranges. Relatively more sheep are shipped in carload lots by owners than any other class of live stock. Cattle, hogs and calves follow in the order named. In sales to local buyers hogs lead, with calves, cattle and sheep following in order.

The study discloses that the time of buying stockers and feeders and the selling of finished animals is restricted too generally to a few months of the year. Should stock-feeding operations be better adjusted to market conditions, a decided influence toward a more even distribution of the supply would be the result.

Co-operative associations of cattle raisers are becoming an important factor in marketing, the report shows. Seven hundred and fifty organizations which market cattle in a co-operative way now exist in 15 States. Four hundred and thirty of these organizations are primarily live-stock shipping associations. The greatest activity of this sort was found in Minnesota, where 215 co-operative live-stock shipping associations are located. The Department specialists declare that these associations bring greater returns to the farmers because of the reduction of marketing



Holstein herd sire Lilith Palmyra, at Hollywood Farm. He is a son of Lilith Queen Pauline, whose record is 26,135.9 lbs. milk and 1077.2 lbs. butter one year, and he is a close descendant of King Hengeweld DeKol.

expenses and the realization of the prevailing prices at the centralized markets, and that they are also valuable because of their educational features.

### Stockyards and Packing Establishments.

The system of centralized live-stock markets in the United States is the largest single factor in the marketing of meat animals. It is noteworthy that this system is peculiar to the United States, no other country having developed such markets for their live stock. Not only is live stock sold for slaughter at the centralized markets, but a large proportion of stocker and feeder cattle also passes through these market centers.

The chief outlet for food producing animals in this country, the study discloses, is wholesale slaughtering and meat packing. Such industries

usually are associated with the great centralized markets. More than 1,200 slaughtering and meat packing establishments were operating in the United States in 1914, and turned out products worth \$1,651,765,424.

Municipally owned or controlled abattoirs are becoming increasingly important in the local marketing of live stock, the report shows, and are displacing rapidly the old type of slaughterhouse. Public abattoirs have been established in 22 cities and 13 States. Local conditions should determine whether or not a city should build its own abattoir, and a thorough examination of conditions, therefore, should be made before definite action is taken.

### Market Returns.

In order to secure information as to the relative cost of the different factors or steps in the processes of marketing small animals and the

proportions of the final price reaching the farmer and other parties to the transactions, the specialists traced several typical lots of beef cattle from producer to consumer, both through centralized markets and where the animals were disposed of locally. In the former case the farmer's share of the gross returns ranged from 54 per cent to 85 per cent, while from 2 per cent to 5 per cent went to pay market expenses, 2 per cent to 9 per cent were received by the packers, and 8 per cent to 33 per cent by the retailers. In the local sales, from 62 per cent to 84 per cent of the gross returns was received by the farmer and from 15 per cent to 38 per cent by the retailer. The detailed figures indicate, however, that even when account is taken of the fact that lower grade stock is sold locally the returns from such sales are not as great relatively as those from sales through centralized markets.

## VOTE.

It is the duty of every citizen to exercise the voting privilege. While our machinery may be expensive in a way, it is worth far beyond its cost to maintain this form of government. During the present presidential campaign facts are brought up for attention, that serve to educate people better than could be done in any other way. Many will read both sides of the contest and form a sound conclusion, while others read or hear with more or less prejudice. The present condition of sectional prosperity will also have its effect. Wheat growers, manufacturers of autos and war material naturally feel some degree of elation, while the fruit growers, lumbermen and business men of the Pacific Coast have been very hard hit by unbalanced conditions.

Large vision, right policies, with firmness for control and justice to the rich and to the poor alike, are necessary to the welfare of our government. Sound reasoning will ultimately express itself in the majority vote, but our citizens should arouse to greater activity in their efforts to see, hear, compare and think. The present contest represents great energy and friendly strife, which is of great benefit to the country. Don't be backward in taking part and then vote.

## TAXES.

Taxes are too high in this western country. The increase is out of all proportion to the increase in population. The ratio must be reduced and the only way is to organize and do it.



Holstein cow Pride of Whittacker 2nd Concordia, owned by the Hollywood Farm. Record, 30 days: milk, 3,013.6 lbs.; butter, 117.89 lbs.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

Address all communications to Box  
1604, Tacoma, Wash.  
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A. B. Nystrom, State College, Pull-  
man, Wash.

The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

A great majority of our readers  
in the State of Washington will vote  
against the referendum measures No.  
18 and 24. Any who have not regis-  
tered should do so at once.

## BASIS FOR CREDIT.

Any dairy farmer who has five or  
six cows which produce a fair mar-  
gin of profit above cost of feed and  
will make the facts known in a busi-  
nesslike manner, will have little dif-  
ficulty to borrow a reasonable sum  
of money to buy more dairy cattle,  
needed machinery or powder for land  
clearing. Of course there must be  
evidence of thrift. Now is a good  
time to prepare for enlarging live  
stock raising operations, for markets  
will likely be strong for a long time  
in the future.

## FARMERS' ORGANIZATIONS.

The commercial clubs and some of  
the representatives of the national  
government and state institutions are  
ambitious for larger aggregate crop  
productions, but the individual farmer  
fails to see any prospect for increas-  
ed profit margin from that sort of  
propaganda. He is desirous of the  
kind of organization which will es-  
tablish in his community a system  
whereby a highly finished product  
can be put into marketable shape at  
the lowest possible cost of produc-  
tion and at the same time a system  
for marketing inaugurated which will  
enable him to control the goods while  
passing through the selling channels.

## THE FINANCE PROBLEM.

Two great obstacles are always  
confronting the farmers who would  
or should avail of character credit.  
One is too high interest rate as a  
rule and the other too short a time  
that money can be loaned by the  
banks on personal notes or what is  
termed character security.

The Farm Loan Law gives no di-  
rect remedy for this serious trouble  
which is very prevalent, especially  
in the Pacific Northwest, where farm-  
ers are energetically trying to lay  
foundations for rural, comfortable  
homes. In fact the need here of pro-  
viding for rural character credit is  
far greater than for mortgage loans,

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

for farmers with real estate security  
can borrow money from numerous  
sources. But indirectly while the  
Farm Loan Law is expensive in its ad-  
ministration, it will serve to set a  
precedent for a lower rate of interest  
to the farmer borrower and longer  
time than usual for repayment. The  
organization required, however, to  
make money from this source avail-  
able is almost impossible in new  
communities where most needed,  
hence impractical in these districts.

The Federal Reserve Bank Act con-  
tains a feature, not generally known  
to farmers, which if put into practice  
may be of material benefit to them.

This provision is for borrowers on  
personal notes who wish to obtain  
any farm equipment in the way of  
machinery, live stock, fertilizers or  
such material as is used for im-  
provement on the farm. In such  
cases the Federal Reserve Board has  
decided that the notes are given for  
"Agricultural Purposes" and that the  
Federal Reserve Banks are permit-  
ted to discount such paper written  
for a period to mature within six  
months. Such notes must contain the  
following clause in printed form:

"This note arises out of the pur-  
chase from the payee of material to  
be used for agricultural purposes."

At the end of six months, if the  
farmer is making good and if he re-  
quires, it is likely such paper can be  
renewed, thus making a full year for  
repayment.

This is a relief to those who re-  
frain from being bothered with 90-  
day obligations. It has been demon-  
strated that where farmers have  
planned and prepared to give reason-  
able care to dairy cows, and where  
they know what cleanliness is and  
practice it in the production and  
delivery of milk, cream or butter,  
that they can repay a considerable  
part of the purchase price of good  
cows in one year. In some cases a  
herd of cows have paid for them-  
selves in that period, but including  
the living expenses of the family a  
longer time as a rule is needed to  
return all the borrowed money.

The same principle holds true with  
the purchase of machinery, needed  
barn equipment, lime or fertilizers.  
When money can be made by buying  
good cows, or when money can be  
saved by adding machinery or an in-  
crease in yield of the crops made by  
expenditure for fertilizing material,  
the farmer should try the character  
feature of the Regional Bank Act.  
In doing so, he must be sure that  
the purchase, under proper manage-  
ment, will return a greater value  
than its cost, there must be thrift  
and a determination to make good;  
otherwise the prospective borrower  
would be unfair to both himself and  
his proposed creditor.

Organization, properly founded, is  
always a help in securing credit.  
Two farmers or more working har-  
moniously together constitute a  
greater character credit asset in pro-  
portion than when measured as indi-  
viduals.

Any system established and ad-  
hered to in some rural activity that  
will yield some measure of profit is a  
good basis for credit. Such as a  
community of farmers uniting for the  
purchase of cows, the purchase of  
machinery for a creamery or cheese  
factory, stump puller, powder, lime or  
trees, can generally realize on the

"Agricultural Purpose" paper to run  
six months with renewal privileges,  
and with the money thus obtained  
the desired purchase can often be  
made at a discount sufficient to pay  
a large part of the interest. The  
problem of obtaining ready money at  
this time when there is plenty of it  
in the country and in the banks  
largely resolves itself into the ques-  
tion of how best to plan for an adapt-  
able kind of farming and how best  
to organize and co-operate for prog-  
ress in the community and to main-  
tain thrift in the undertaking.

## JOHN A. STEWART

Mr. John A. Stewart, senior mem-  
ber of the Christopher Nursery,  
Christopher, Wash., passed from this  
life on October 19. He had been ill  
for several years from a stroke of  
paralysis and during that time had  
taken no active part in the business.  
He was a Scotchman by birth, had  
been trained from youth in the nur-  
sery business in the old country, and  
continued in the same line for more  
than a third of a century in the State  
of Washington.

He was painstaking and careful in  
his work, prompt and fair in his  
dealings and a man of strict integ-  
rity. Since its organization 16 years  
ago he was a member of the Pacific  
Coast Association of Nurserymen, in  
which organization he was an influ-  
ential leader. The trees propagated  
under his care and sent out to  
thousands of homes in the Pacific  
Northwest have yielded bountifully  
and will serve a visible emblem of  
blessings to generations following.

His sons, who have charge of the  
Christopher Nursery, will continue to  
carry on the business as usual.

## HON. D. S. TROY.

Hon. D. S. Troy, who passed away  
recently as a result of an automobile  
accident, was a man of broad vision,  
very energetic and unselfish in his  
endeavors to better the conditions  
of his fellow men, and particularly  
was he helpful to those engaged in  
the rural industries. He was a  
leader in the development of the  
dairy industry, both as producer and  
manufacturer of high quality dairy  
products.

He had been a member of the legis-  
lature for several sessions, and was  
sponsor for a number of good laws.  
In considerations and dealings with  
others he was a prince. All who  
knew him came in touch with the  
gifts of genius, noble and true. His  
influence will live on in the mem-  
ories of his many friends.

A blue cross-mark, if any, opposite  
the name on the label indicates that  
it is time for renewal subscription  
payment. Look over the premium  
list in another column of this paper  
and please respond promptly.

## BANWINE RHUBARB.

The production of rhubarb for the  
commercial market is a growing in-  
dustry. It is being shipped to dis-  
tant markets fresh, dried and canned.  
The Banwine is one of the popular  
varieties in the Pacific Northwest,  
and Mr. H. W. Whitacre, manager  
of the Wesco Seed Company, who  
handled a large quantity last year,  
is enthusiastic over results that may  
be attained under proper planting,  
good culture and reasonable care.

From personal experience and obser-  
vation, Mr. Whitacre states that the  
gravelly soils extending from Tacoma  
south to Centralia, when irrigated  
and fertilized, produces the very  
finest quality of rhubarb, because  
a quick growth is obtained which  
makes a tender stock. Rhubarb re-  
quires rich soil. Use a liberal sup-  
ply of barnyard compost, preferably  
from the cow stable.

Plow a furrow at least 16 inches  
deep, fill about half full of well-de-  
cayed manure, rake in a few inches  
of soil and set the plants or buds  
so as to be just flush or level with  
surface after all is finished.

In planting a few roots for the  
house garden, dig a hole about the  
size of a tub, fill the bottom with  
manure, then some loose garden soil,  
and plant. This may be done in  
the fall or through the early winter,  
when the weather is favorable. If  
the plants are set on gravelly soil,  
preparation should be made before-  
hand to have water ready for irri-  
gation when needed during the grow-  
ing season. Moisture is the prin-  
cipal factor in making the crop,  
after the plant bed has been made  
and good roots have been selected  
for cultivation.

## WALNUTS IN WASHINGTON.

During the last 10 years many in-  
dividuals throughout the state have  
planted a few walnut trees of various  
kinds as an experiment to deter-  
mine what success might be attained  
when endeavoring to grow for the  
markets. The results of these indi-  
vidual plants have shown beyond  
doubt that walnuts can and are being  
grown successfully in each of several  
localities throughout the state.

While at the Washington State  
Fair, North Yakima, last month, in  
company with Secretary Corbally, of  
the Chamber of Commerce, Spokane,  
O. M. Morris and W. S. Thornber,  
of the State College, F. A. Wiggins,  
manager Washington Nursery Com-  
pany, and G. W. Grant, representa-  
tive Oregon Nursery Company, the  
writer made an inspection trip to a  
number of places in the vicinity of  
North Yakima where walnut trees  
had been planted from two to fifteen  
years ago.

At the home of W. W. Robinson,  
Editor of the Yakima Republic, a  
large Chaberte tree was bearing a  
fair crop of nuts. A large crop had  
been harvested last year. At the  
home of F. F. Busey is a walnut  
tree planted 20 years ago, now 5 feet  
in circumference, with a branch  
spread of 60 feet. This seedling bears  
moderate crops.

At the home of Mr. H. R. Linse  
is a Chaberte tree 4 years old, 20  
inches in circumference, bearing a  
good crop this year.

On the farm of Mr. H. C. Weber  
is a Chaberte tree 8 years old, in

## OWNERSHIP STATEMENT

Required by Act of Congress

Before me a Notary Public in and  
for the State of Washington, C. A.  
Tonneson, being duly sworn states  
that he is the owner and publisher  
of the Northwest Horticulturist &  
Dairyman, that there are no other in-  
dividual owners and no corporation.  
(Signed) C. A. TONNESON.

DANIEL MCGREGOR,  
Notary Public, Tacoma, Washington  
Dated September 27, 1916.



good bearing condition, and 100 Franquette trees planted two year ago, which came through the freeze of last winter without any injury. Mr. Weber's most productive trees were growing alongside an irrigating ditch, within an inclosure used for a hog lot. The trees afforded splendid shade for the hogs and both seemed to thrive well with an abundant water supply. This is suggestive that numerous stretches along the irrigating ditches might profitably be planted to walnut trees and inclosed for pasture for the hogs, sheep or other young stock.

At the home of Mr. A. E. Larson large walnut trees, one 42 inches in circumference, branch spread of 36 feet, were also found in bearing, which had been set out 9 years, and maturing a good quality of nuts. Here were also good hazelnut trees of Kentish Cob and Duchilly varieties in bearing. Mr. Larson having planned to carry out some experiments started several years ago, showed some good samples of the Malaga grape, Thompson's Seedless and Lucile varieties.

On Mr. Fred Klingele's place was a Chaberte walnut tree about 20 years old, in good bearing condition, and on Mr. Shephard's place a Mayette tree with some nuts this year, that had borne heavily last year.

About a year ago Mr. Lindsley planted 6 acres on Selah Heights to the Vrooman Franquette walnuts, and they have made a remarkably large growth this year.

Mr. A. Burham, Nob Hill, has a 5 year old tree over 17 inches in circumference, which began bearing when two years planted.

Mr. Walter N. Granger, at Zillah, has Franquette trees in bearing which were obtained from California about 9 years ago. These trees bear every year.

In the Clarke County exhibit at the Washington State Fair and at the Land Show, Seattle, Mr. A. A.

Quarnberg, of Vancouver, Wash., had a fine exhibit of Franquette, Mayette and other varieties of walnuts, also of hazelnuts. Both classes are now being grown, and further plantings made each year in Clarke County.

There are now many successful walnut orchards in the Pacific Northwest. In Chelan County the crops are becoming of commercial importance. The Great Northern dining car department bought the entire crop of three walnut orchards near Lakeside. Since it has been demonstrated and the fact established that the Vrooman Franquette variety is being grown successfully the demand is largely for this variety because of its large size and superior quality in every way. Also when the crop of a single variety is large the marketing problem is more easily solved, for good buyers are always attracted by both quantity and quality.

Those who are preparing to plant Franquette walnut trees may benefit by getting in touch with the nurseries offering this variety for sale as early as possible for the strong demand for good trees is likely to exhaust this year's supply at an early date.

### WASHINGTON HOGS.

A pamphlet issued by the Washington state bureau of statistics, entitled "Dairying, Poultry and Stock Raising in the State of Washington," states that during the past six years a steady increase in the number of swine produced on the farms each year has been noticeable. While at the beginning of the year 1910, there were 183,000, valued at \$10.50 a head, or \$2,488,000 total, on January 1, 1916, there were 314,000 valued at \$8.50 per head, or \$2,669,000 total. A fluctuation occurred, however, during the intervening years, the maximum number and value being January 1, 1915, when there were estimated to be 327,000 valued at \$3,630,000.

## The Scandinavian American Bank

OF TACOMA, WASHINGTON

With Assets of

\$2,800,000

Is rendering efficient service to patrons and encourages the substantial development of dairying and kindred industries.

Character and correct methods of operation are fundamental elements in all successful credit systems.

You can do your banking by mail

L. J. Campbell, superintendent of the Stubblefield Home, Walla Walla, says: "To raise hogs for profit, feed must be largely raised and consumed on farm. Have nothing but purebred stock for all purposes. Start light; get one boar and two or three sows. Use individual pens, and see that they get plenty of air, pure water, and all the range possible." He estimates that a modest start could be made with three gilts at \$25 each and one boar at \$25, and four pens worth \$15.

John B. Peterson, Montborne, Washington, raises about 150 purebred Duroc Jerseys, as a regular business. He says: "I sell most of my hogs when they are from six to eight weeks of age, except my breeding stock. I would suggest that a beginner start with purebred hogs. One can get good gilts and boars old enough for service from \$25 to \$40."

Preston Royer, Prosser, R. F. D. 2, Benton county, says: "A person with no experience should start in the hog business in a small way, as the correct feeding of the hog is difficult if properly done. A person cannot raise hogs at a profit on grain alone, but must have pasture and roots to balance the ration properly and cheaply.

I. L. Jones, Prosser, Benton county: "I believe in lots of pasture and self feeder for fattening hogs. For new beginners I would advise using full bloods for breeding purposes,

even if raising them for market, as there is very little difference in the cost unless it is a show hog. As to market, here at Prosser, some of us farmers have been bunching our hogs together for a carload and then one of us accompanies them to Seattle, thereby we have been saving about 50 cents per hundred rather than selling to a local buyer."

John Meyer Mead, Spokane county: "I don't think it is profitable to try to raise hogs unless one should have good clover or alfalfa pasture and a good warm high house. It is most profitable not to raise too many at one time, unless one can take good care of them. If properly taken care of, pigs should at 8 months weigh 250 pounds. I have had them weigh more. I think it a good idea to have both clover and alfalfa pasture. Hogs do well on clover when it is in blossom. As to marketing, I market mine alive and find it more profitable than dressed. One should at least have 3 cents more dressed. I think one can get started very reasonably. One should get brood sows from \$20 to \$25. Four or five sows will give one a very nice start."

John E. Taylor, North Bend, King county, says: "First, that to raise hogs at a profit one should raise their feed; second, that he must have range fenced in—pasture preferred; third, he must utilize all weeds, small roots, inferior vegetables and other waste products in feeding; fourth, he should change pasture often—whether the pasture is large or small, it should be divided into two or more lots, and hogs given fresh range every 10 to 20 days; fifth, I find it pays best to sell when from 5 to 7 months old. I feed as above stated till pigs are 5 months old, then in addition to this ration I give corn meal and shorts (wet) twice a day. Pigs fed in this way will dress at 6 months 140 to 165 pounds."

Many producers in the state have made a success of hogs as an independent industry, although they are raised chiefly as a side product to dairying, with which they are naturally partners. When raised as a side issue either along with dairying or in connection with some other line of farming, if one does not get overstocked, there can be no doubt regarding the expediency of raising them during any kind of a year.

J. E. Trimble, Garfield, Whitman county, keeps from 50 to 100 hogs as a side issue only, pasturing them on alfalfa, peas and wheat stubble, then feeding corn. He says: "I believe there is good money to be made in hogs in this part of the country by making the industry the main issue. One should raise plenty of roots and corn for feed. We are not bothered



The illustration is one of Mr. Walter N. Granger's Franquette trees at Zillah, Wash., with a life size insert of one of the nuts it bears. These trees were bought in California about nine years ago. Note the growth. They bear every year.

A large crop was produced this year than last, altho other more tender trees near by have very few nuts.



with cholera here."

#### Receipts for Year 1915—

Pork consumed .....\$ 84.00  
Stock sold ..... 1,902.85  
Increase in stock ..... 200.00

Total receipts .....\$2,186.85

Total profits .....\$367.80

#### Expenses for Year 1915—

Feeding .....\$1,400.05  
Pasture ..... 200.00  
Labor ..... 65.00  
Other expenses ..... 154.00

Total cost .....\$1,819.05

W. E. Mintzer, Gordon, Douglas county, aims to keep about 40 hogs each year, chiefly Poland China and Berkshires. The year 1915 was the first that he made a profit, because he raised his own feed and hogs, instead of buying everything as he had in the past. He suggests marketing them dressed if possible: "Use alfalfa pasture with barley or straw or headed barley. This keeps stock hogs growing nicely during the summer. I finish with corn, feeding 40 to 50 days, corn on the cob. For getting started in the hog industry you need two sows worth \$40, a hog fence for four acres, \$40, and alfalfa pasture." Accounts for 1915:

#### Receipts—

Pork sold .....\$208.25  
Pork consumed ..... 18.00  
Increase in stock ..... 145.00

Total receipts .....\$371.25

Profit .....\$201.25

#### Expenses—

Feeding (44 head) .....\$ 85  
Pasture ..... 40  
Labor ..... 20  
Other expenses ..... 35

Total expenses .....\$180

### DISTRIBUTION OF THE CITRUS FRUIT CROP

By Harold G. Powell, Manager,  
Los Angeles.

The distribution of the California citrus fruit crop represents the most highly developed system of organized marketing to be found in American agriculture. After an evolution of more than twenty-one years, the Exchange growers, through economic necessity, have developed their own distributing and marketing service, which they operate without profit, as a true industrial democracy, on a non-capital, co-operative basis. Through their 162 shipping associations, 17 district Exchanges, and 77 agencies, served by a daily telegraphic service between the agents and Sales Departments, the Exchange obtain prompt and detailed expert information regarding the supply of fruit in California, the consuming power of the different markets, the weather conditions, the supplies of competitive fruit, such as cantaloupes, strawberries and peaches, the supplies of Exchange fruit rolling, the supplies on track, the number of cars of Exchange fruit that will arrive in any market for a two weeks' period, the prices in different markets, and the proportion of the crop that should move from California daily if the crop is to be evenly distributed. This information is available to all Exchange shippers, and is used by them as the basis of forming judgment regarding distributing and marketing

matters.

Of the 30 per cent of growers, who are not Exchange members, some operate partly on a co-operative basis, although no other group of growers or shippers has developed an exclusive selling agency, and none operate under a non-capital, non-profit form of organization. There are some large growers who distribute their fruit through brokers or other agencies and a number of local buyers and brokers or representatives of eastern buyers, who secure fruit each year from growers who are not associated with any of the growers' organizations.

The experience of the citrus industry, as well as of other branches of American Agriculture, has shown that an affiliation of those growers who handle their own distributing and marketing on a non-profit, co-operative basis, with those who handle producer's organizations for profit, or with speculative buyers or brokers, is unsound in principle, unworkable in practice, and is detrimental to the best interests of an industry. The Exchange is an independent growers' organization, with its doors open to any grower who desires to utilize its facilities, and who is willing to assume his share of its responsibilities. He can become a member of a local association, purchase his supplies at the lowest cost through the Fruit Growers Supply Company, gain the advantage of shipping under the "Sunkist" brand, and, at the end of any year, he may withdraw if he is

dissatisfied.

#### Service for Members.

On several occasions efforts have been made to affiliate different shipping interests, such efforts usually having as their origin shippers who have been unable to develop an efficient marketing service for themselves. In April, 1903, nearly ninety per cent of the growers and shippers formed a compact business organization, known as the California Fruit Agency, to distribute and market the crop of its members. The distribution of the crop, routing, diversions, destinations, and sales of the fruit were centralized and the affairs of the organization were managed by the ablest and most experienced men which the industry had developed. Probably no other affiliation of growers and shippers has been consummated under more favorable theoretical conditions and yet in eighteen months it fell apart because of the fundamental difference in the purposes of those in control of the different units composing the membership. The fundamental purpose of a growers' organization is service and maximum profit to its members; that of an outside interest operating on the grower's product is profit for itself. The former develops through the upbuilding of an industry by its own efforts in response to economic necessity. The latter is supported by the industry and contributes nothing to its upbuilding. These two purposes can not be harmonized in a working organization. When the Agency dis-

solved the growers began to strengthen their organization, and in August, 1904, started operations anew with 46 per cent of the industry included in the Exchange membership, thus ending a combination of interests that contained the elements of attractive plausibility but which was based on the grouping of interests inherently antagonistic to each other.

#### Growers Retain Control.

Since the Agency dissolved, Exchange growers, profiting by their experience, have affiliated with no other shippers in the distribution of their crops. Rather have they set for themselves the task of improving every branch of the Exchange service, so that growers may join together with increasing confidence and with a conviction that the growth of the organization means a greater insurance to the permanent stability of the citrus industry.

During the year an effort has been made by the newly created State Market Commission to bring about an affiliation of every shipper, shipping company, buyer, and growers' association in a State Bureau of Distribution through which the shippers would be advised as to the distribution of their fruit. After consideration extending over several months, the Board of Directors, representing nearly 70 per cent of the growers in all parts of the State, decided unanimously not to join the State Market Bureau. The Board was unanimous in the conviction that the safety and permanence of the citrus industry

# LIMED SOILS AND BIG CROPS

The large yields of clover, vetch-wheat, alfalfa, corn, barley, other various grasses and root crops are obtained where soils have 0.5 per cent. or more of lime. Nearly all soils west of the Cascade Range are deficient in lime.

Winter cropping is becoming the practice with dairy farmers in this section because of the mild temperature and humid atmosphere during the fall and spring months. Those who obtain the large yields of the legumes, or grain crops use lime liberally to replace the amount removed which is in

|                        |           |
|------------------------|-----------|
| 2 tons of clover ..... | 75 pounds |
| 30 bushels peas .....  | 75 pounds |
| 65 bushels corn .....  | 12 pounds |
| 20 bushels wheat ..... | 8 pounds  |

A twenty-ton vetch-wheat crop will carry not less than 200 pounds lime. Clover, vetch, alfalfa and peas fail where lime is absent and these crops are light in proportion as this element is deficient.

Lime acts both chemically and physically. It is a powerful agent to sweeten sour soils, hastens the decay of organic substances, stimulates to activity plant food in peaty soils, drained and swampy lands which have been under water for a time.

Lime makes dense clay soils mellow and porous and sandy soils more compact. In short, lime is necessary for the best results in any crop.

Put lime on your land any time that is convenient between October 1st and May 1st, but the earlier the better.

When ground lime stone, hydrated lime or a combination of the two are to be used it is well to apply not less than 500 pounds per acre on the high lands and not less than 1000 lbs. on land that is low and heavy. Our Fertillime can be spread evenly and will give earlier results than lime in any other form. Our ground limestone is also very fine and better than 95 per cent pure.

As orders are coming in rapidly and there may be shortage of cars preventing delivery on short notice those who are preparing to apply lime will do well to submit estimates of required amount as soon as possible. Write at once for our Bulletin No. 11, which will give valuable information, and get our prices in ton and earload lots.

## INTERNATIONAL LIME CO.

Manufacturers

Hoge Bldg.

Seattle, Wash.

Please Mention This Paper.



will be best served in the future, as it has been in the past, by the further growth of the non-profit, co-operative method of fruit distribution and sale. This can best be accomplished by the handling of the product by the growers through the agencies which they themselves have created and developed.

### FEDERAL AND STATE EFFORTS.

#### Cooperation with Fruit Growers' Agency.

State cooperation with both the Federal Government and the Fruit Growers' Agency is the result of the conference of Governors of the three Northwestern States, which was held at North Yakima last month. Governor Withycombe, of Oregon, Governor Alexander, of Idaho, and Governor Lister, of Washington, endorsed the Agency and agreed to appoint an Advisory Board, to consist of nine members, three to be appointed by the Governor of each State. The function of this Board is the suggestion of means whereby the State governments can best work with the Federal Government and the Agency for the benefit of the fruit industry of the Northwest.

Governor Lister conferred with President Weyrauch last week over the appointments to be made, and the appointments will probably be announced just as soon as all three State Executives can make their selections.

### FLAX AND LINEN.

The high prices of linen and of the flax fiber from which linen is made has centered attention on the necessity of establishing a real linen industry in this country, the greatest consumer of linen in the world. There seem to be two big problems which must be solved before success is assured. One is to find some artificial method of preparing the flax straw for the spinner, thus relieving the flax grower of this task, and the other is to convince the American public that American-made linen is as good as any other. There are a number of minor problems, and they are all discussed in a report by W. A. Graham Clark, just published by the Bureau of Foreign and Domestic Commerce, Department of Commerce.

The only country in which the production of flax fiber has increased consistently in recent years is Russia. In the British Isles and in France the production has decreased in spite of all efforts to keep the industry growing, and in Austria-Hungary, Belgium, and the Netherlands the industry has not been able to hold its own. The American production has never been of importance. Thanks to liberal government aid and to cheap labor the Russians had gradually been getting a monopoly of the business up to the time the war broke out.

In the United States flax has been raised almost entirely for the seed, which is used to make the well-known linseed oil so necessary for the production of good paints and varnishes. Of some 3,000,000 acres of flax raised in this country in 1915, the Department of Agriculture estimates that only 2,000 acres were devoted to flax for fiber. The bulk of the straw from the seed-bearing plants is burned and used for fer-

tilizer. It should be borne in mind, however, that flax growing for seed and flax growing for fiber are separate and distinct industries. Some flax is grown for both seed and fiber, but a decision must be made as to which is to be the more important product, just as the sheep raiser must decide whether mutton or wool is to be the primary consideration.

In Europe the farmer not only raises the flax, but prepares the fiber for the spinner. This preparation requires several processes, one of which, known as "retting," requires considerable cheap labor and much time and is in addition a most disagreeable process for the workmen. The problem in this country is to find some chemical process of retting that can be carried out at a factory and thus allow the farmer to confine his attention to the agricultural end of the industry. This is, likely, the only condition on which the American farmer will take to growing flax for the fiber. Some progress is already being made in chemical retting and at least two concerns are now buying flax stalks from the growers for further treatment. Chemical processes have been tried before without much success, but one of the new concerns is now selling chemically retted fiber to Europe and the other is making coarse linens for use in clothing and for curtains.

Even if a good all-American linen is produced in this country, however, there still remains the great problem of finding a market for it. That means that time and effort will be required to persuade the consumer to buy the domestic product instead of the imported. Many people invariably choose the imported article when it is displayed alongside of domestic products, almost regardless of quality. The president of a mill now making dyed and bleached dress linens from American flax has found that, small as is his product, there is difficulty in getting the jobbers and department stores to handle it. The tendency is to assume that, even tho it is apparently of excellent quality, it cannot equal the old established linens from abroad. There will never be a better time than the present to popularize the domestic product, for the imported article is scarce and high priced. In normal times our imports of linen goods vary from \$25,000,000 to \$30,000,000 and the demand had been steadily increasing up to the time of the war.

The Bureau's report is entitled "Development of an American Linen Industry," Special Agents Series No. 122, and may be obtained for the nominal price of 5 cents from the Superintendent of Documents, Washington, D. C., or from the nearest district office of the Bureau of Foreign and Domestic Commerce.

### THE NORTHEY BERRY.

For many years we have tested the various new berry plants as they have appeared, but only a very few prove desirable over existing sorts.

In the Northey berry we have something of exceptional merit, a very early berry, combined with large size, firmness and high flavor and something entirely distinct in the berry line.

It is not a dewberry, blackberry or raspberry. It will form dense rounding bushes, and will require no trellising. The tips of the branches



Save one-half

# MICA AXLE GREASE

MICA AXLE GREASE lasts twice as long as ordinary axle grease. Contains powdered mica—a mineral lubricant that is practically wear and heat-proof. It gives a cool, slippery coating that clings to the spindle, makes easier pulling, and out-lasts plain grease two to one. Saves harness, saves horses, saves money. Get a can from your dealer today.

Standard Oil Company  
(California)

## BOXES

### For Fruit Growers and for Creameries

All kinds, Quality A1, Prompt Shipments

PACIFIC BOX COMPANY

26 and East I St.,

Tacoma, Wash.

root readily and form young plants, and these commence bearing at a very early age.

The fruit which is a ruby red in color is of the size of the largest blackberries, and is produced in the greatest abundance. The flavor is like rich, red raspberries, but with a quality wholly its own. The Northey berry can be used in every way that strawberries, raspberries and blackberries are used.

Being so extremely early it always has the market to itself. It ripens with the earliest strawberries and continues for several weeks, and, in fact, fruit can be picked all summer long.

It is far more productive than any backberry with which we are acquainted. As to its hardness throughout the United States we are unable to state, but believe it to be as hardy as most of the raspberries grown.

In its fruiting season it is a sight not to be forgotten, with its myriads of fire red berries sparkling in the sunlight.—S. L. WATKINS, Pleasant Valley, California.

### CRANBERRIES.

Longbeach cranberries were on exhibit at the Land Show, Seattle. The varieties shown: Cape Cod, Centennial and Howes, as standards. Others are McFarlin, large berry, but not high quality nor productive. Bachelor and Early Black.

The crop was about 1,500 barrels, raised on 40 acres of land in production, and it sold readily at \$9 per barrel. Pacific County, Washington, is thus becoming noted for its cranberry marshes, and for the high quality cranberries grown.

I believe in work, hard work, and longer hours of work. Men do not break down from overwork, but from worry and dissipation.—Charles E. Hughes.

### TRANSPLANT IN THE FALL.

In general the fall is the best time to plant trees and shrubs on the home grounds. When planted in the fall, the plant is given an opportunity to spend its strength in producing new root growth rather than top growth. These new roots are the

"feeding" roots and if well established will give added vigor to the plant the following year. The protection and health of the root system is the most important consideration in plant growing.

Rainy or cloudy days are the best ones in which to do planting. Transplant after the leaves drop in the autumn or before they open in the spring. Remove injured roots, broken branches, and cut back the tops. Preserve the fine hair-like roots; they are the feeders, the others only serve as anchors. Never allow the roots to dry out in the wind or sun. Cover them with earth or wet straw. Dig the hole much larger than the spread of the roots and do not bend or crowd them. Tamp the soil firmly and closely about the roots, but leave about two inches of loose soil at the surface. These planting rules are important. A tree lives longer than a man; take time and care in planting it, and in general, plant in the fall.—H. F. MAJOR.

### HARVESTING WALNUTS.

In Oregon and Washington more or less artificial drying is necessary. According to Prof. C. I. Lewis, in the Walnut Book, the nuts are gathered, graded and washed, then dried at a temperature between 70 and 90 degrees. It takes from one to two days to dry the nuts thoroughly which on a large scale is usually done in an evaporator, similar to that for prunes.

"As yet very little bleaching of the nuts has been practiced in Oregon. The trade has taken all nuts just as they have been washed and dried and has paid the top price for them. It would be well, indeed, to encourage this tendency.

"As soon as the nuts have been thoroughly dried, they should be graded. Up to the present time, Oregon orchardists have been able to sell their nuts without grading, but as the crop increases, grading should be established, and probably will be demanded by the purchaser. Generally, at least two sizes are made. First, those nuts which will not pass through a one-inch mesh; and, second, those which will pass through a mesh not larger than one inch and



not smaller than three-fourths of an inch.

"There are mechanical contrivances for doing this grading. Buyers will often crack one hundred nuts taken at random from various sacks, and if about 90 per cent of these are well selected, are of the proper color, and properly dried they will generally purchase them as first class nuts.

"After the nuts have been graded, they should be stored until marketed, and should be kept in a cool, dry place. For marketing they can be put up in the small cartons, or can be sacked in gunnysacks holding about 50 pounds.

#### Varieties.

"We have not, as yet, secured the ideal nut; perhaps we never will. We need one which should approach the following standard: Of good size, tightly sealed, handsome color and not too rough. The shell should be just thick enough to stand handling. The kernel should fill the shell thoroughly, should be heavy and have a light pellicle. The variety should be a good pollen producer, a vigorous grower and free from blight. These are just a few characteristics that come to my mind off hand. There are doubtless others. Possibly it is too much to expect in one nut. To use the familiar idiom, we should certainly be getting everything in a nut shell.

"At the present time, the Franquette seems to be the best nut we have, and the Mayette is very promising. These two are the most desirable varieties at the present time. Undoubtedly, however, we should obtain one or two very favorable strains of walnuts from the large number of seedlings that have been planted. While the growers are planting the Franquette more than all others combined, it is wise to plant a few other varieties for pollination purposes. This is regardless of whether the Franquette is self-fertile or not, since our work with tree fruits points conclusively to the fact that we get better returns where we provide for cross pollination. It would, therefore, seem advisable for the grower to plant a few of the better varieties as pollinators, even if not more than one tree to the acre were used.

#### Franquette.

"This is a very old nut. It has been grown commercially for over a hundred years. There are numerous strains, but the so-called Vrooman is probably superior to most other strains. The Franquette is a high quality nut, is a good vigorous tree and regular bearer. It does not bear heavily while very young, and one should not expect big returns before the seventh year. At the best, the variety is only a medium bearer.

"While attacked with blight, it is seemingly as resistant as any of the varieties grown.

#### Mayette.

"The Mayette is a nut of superb quality. It is the Grenoble nut of commerce, is of ideal commercial shape and quality. Its greatest drawback here seems to be its light yielding qualities in many cases and its questionable vigor.

"Among others that should be tried on a small scale are the Kirk, the Meylan, the Gladys, Eureka, Concord

and Wiltz. These are offered by the various nurseries on the Pacific Coast."

### WALNUT VARIETIES WANTED.

A walnut variety having good commercial quality and grown on vigorous, heavy bearing and blight resistant trees is being sought by the committee of the Oregon State Walnut Association appointed to investigate the walnut variety situation. The committee, of which C. I. Lewis, chief of horticulture at the Agricultural College, is chairman, will make a visit of inspection to walnut growers who believe that they have one or more specimens approaching these requirements. The walnut industry is being rapidly developed. The commercial nut is of good size, has a medium shell tightly closed about the kernel which should be full, well flavored and rather light in color. It is not expected that any one variety will contain all of these desirable qualities in an eminent degree, but growers having specimens closely approaching them are asked to notify the chairman of the committee at Corvallis, Oregon, and arrangements will be made to visit these growers who are able to report promising trees.

### EVAPORATORS BUSY.

Fifteen carloads of Rogue River Valley, Oregon, pears have been received by the Everfresh Produce Company, of Sutherlin, and will be evaporated.

The capacity of the plant has been increased and now is one of the largest in the state, employing more than a hundred persons.

During the loganberry season 250,000 pounds of berries were prepared for market.

Following the pear harvest the plant will have from six to eight weeks' run on prunes and apples.

### FRUIT PACKAGE ACT.

Standards for Climax baskets for grapes, other fruits and vegetables, and other types of baskets and containers used for small fruits, berries and vegetables in interstate commerce are fixed by an act approved by the President August 31, 1916. The law will become effective November 1, 1917.

Standards of three capacities are fixed for Climax baskets, 2, 4 and 12 quarts, dry measure. The other standards are for "baskets or other containers for small fruits, berries and vegetables." They are to have capacities only of one-half pint, one pint, one quart, or multiples of one quart, dry measure. Such containers may be of any shape so long as their capacities accurately accord with the standard requirements.

### EVAPORATING APPLES.

J. S. Caldwell, the by-products specialist at the Experiment Station, Pullman, Wash., has figured that at the present prices of evaporated apples, with peels and cores utilized, that a fair profit can be realized by paying \$11 per ton for the apples delivered at the evaporator. Small evaporators of the "family drier"

## Would you plant your fruit trees in large tubs?

"Without the use of dynamite in tree-planting," says U. S. Bulletin No. 38, "the roots soon meet with the smooth and compacted sides of the hole, through which they have great difficulty in penetrating. The tree is in about the same situation as if it had been planted in a large tub."

But when you plant your trees in holes blasted with

**GIANT FARM POWDERS**  
STUMPING — AGRICULTURAL

the trees will grow faster, develop deeper, stronger roots, and bear earlier. "When dynamite is used," continues the bulletin, "cracks are formed in the soil to distances of five or sometimes six feet on all sides. This makes the very best conditions for the continued growth of the tree. For tree planting dynamite is recommended confidently as the best method of preparing the soil."

In selecting explosives for your orchard work, be careful to get those that will crack, powder and loosen the soil, rather than pack it or throw it in the air. The proper explosives are the Giant Farm Powders. There are two of these—Eureka Stumping Powder and Giant Stumping Powder—both improved forms of dynamite, made especially to meet western agricultural conditions. They are sold by distributors everywhere. Ask your dealer for them.

### Book, "Better Orchard Tillage," FREE

#### Mail the Coupon Today

Practical, helpful, valuable information on improved methods of planting and cultivating fruit trees is contained in our illustrated book, "Better Orchard Tillage." This book and others on stump blasting, subsoiling, ditching and boulder blasting are free. Choose the books that you want and mark and mail the coupon.

### THE GIANT POWDER CO., Con.

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Send me your illustrated books on the subjects which I have marked X:

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- ☐ Ditch Blasting

Name .....

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Write below your dealer's name.

type make a product of satisfactory quality, but if the labor is counted, the cost invariably exceeds the selling value of the dried product.

To be commercially profitable, an evaporator must have a daily capacity of at least 400 bushels of apples, and must be equipped throughout with modern labor-saving machinery and equipment. The cost of such a plant, completely equipped, will be from \$3800 to \$4700, depending upon the cost of materials in the locality.

Three types of evaporators have been subjected to the thorough test of commercial use in the production of evaporated apples, and may be commended as the most efficient and economical evaporators thus far designed. These are the kiln evaporator or hop-kiln drier, the tunnel evaporator, and the Carson-Snyder or all-purpose evaporator. The hop-kiln drier is designed primarily for the drying of apples. It is slightly less expensive, both in construction and in operation with apples, than either of the other types of evaporator described.

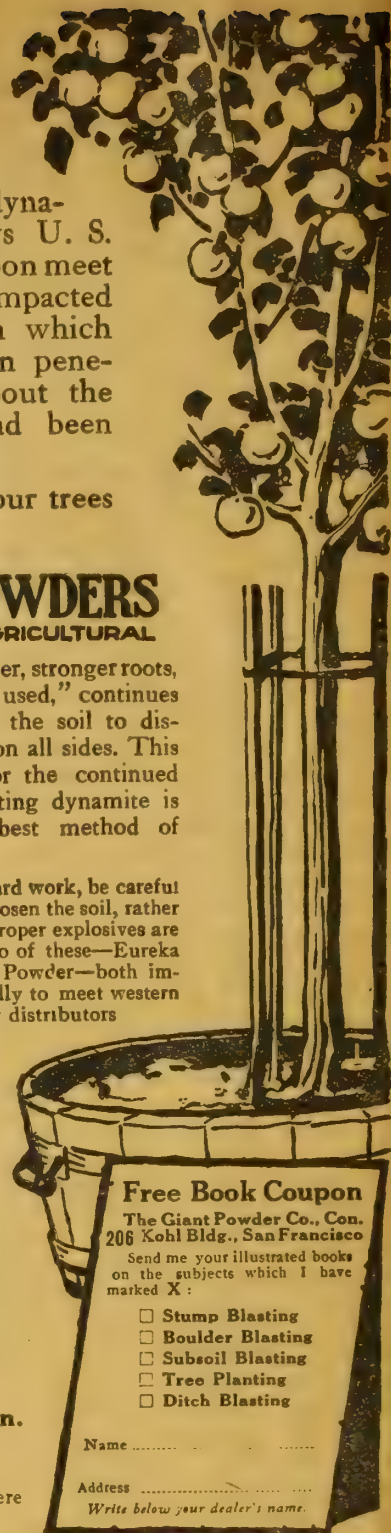
The tunnel evaporator is somewhat more expensive, both in construction and in operation, than a kiln evaporator of equal capacity, but has the advantage that berries, prunes,

peaches, and cherries may be dried perfectly satisfactorily. The construction of a model tunnel evaporator is fully described and illustrated in Bulletin 131, and estimates of materials and cost of construction, equipment, and operation are given in detail.

The Carson-Snyder evaporator differs materially from the tunnel type in its construction and in the principles involved in its operation, but is practically identical in cost, both for building and for operation. Like the tunnel evaporator, it will handle berries and soft fruits as well as apples. If other fruits than apples are regularly available for evaporation in considerable quantities, the plant should be of the tunnel or Carson-Snyder rather than of the kiln type.

The yield of evaporated stock per bushel of fresh fruit will range from 6½ pounds for low grade culls, or apples of low sugar content, to 7½ pounds for C grade, or those of high sugar contents. About 20 per cent of the product ought to rank as first grade or choice.

The different evaporators are described in detail in Bulletin 131, of the Experiment Station, Pullman, Wash.





## IRRIGATION

### VALUE OF IRRIGATION.

During the early part of the year 1916, up to July, there appeared to be an abundance of moisture in the Coast Section. There seemed to be little if any use for water on the Yelm Prairie, Sequim Prairie or other projects. But the fall has been as extremely dry up to October 10th as the summer was excessively wet. The farmers are anxious to do their fall seeding of vetch, wheat and other grain and grass crops. Here is the advantage of irrigation. On the places above mentioned where ditches bring the water, and on places where there are pumps or hydraulic rams, the seeding has been done in good time, and the 20 ton rate of yield of a wheat-vetch combination crop for silage to be cut next June is almost a certainty. Wherever it is possible to obtain water for irrigating purposes it should be done. Available irrigation more than doubles the productive value of a piece of land even in humid sections of the Pacific Northwest.

### IRRIGATING ORCHARDS.

It is generally conceded that water should be furnished the trees to permit them to make healthy growth up until July to August 15, depending on the length of the frost-free season, after which water should be withheld to permit the new growth of wood to ripen thoroughly before freezing weather. I. D. O'Donnell suggests in the Reclamation Record that where it is possible to irrigate trees in the late fall or early winter it is good policy to do so, but care should be taken not to apply water early enough to start a second growth, as this second growth would go into cold weather soft and the trees would be quickly injured or killed. These late irrigations will prevent the trees drying out unduly during winter and enable them to make an early start in the spring.

For gardens and orchards the furrow system of applying water is both the most effective and labor saving. In order that the trees may be induced to develop symmetrically, water should be fed to them from all sides, which is effected by circling the tree with the furrow. The root system of a tree is usually understood to extend as far out as does the branch system; therefore, as the trees grow the irrigation water should be well applied over a corresponding increasing area to place the moisture well within the reach of the entire root system.

Frequent and thorough cultivation should be insisted on for both orchard and garden. Thorough cultivation lessens the danger of overirrigation.

After fruit trees have reached their full growth it has been found best in some sections to discontinue cultivation of the ground and to seed cover crops, such as clover, alfalfa, or some grass. Some authorities claim this the best system to follow in order to keep the trees in healthy condition.

The so-called cover crops should consist of one of the legumes, if possible, such as alfalfa, clover, vetch or peas, because these crops improve the soil by their power of trans-

mitting nitrogen from the air into the soil. When cropped with any of these grasses more water is generally required to mature fruit to good size than where clean cultivation is the practice, but there is less danger of winter injury to the trees and the fertility of the land is kept up. Another advantage of the inter-cropping is the opportunity for hog raising, which affords a good by-product for fruit growers in seasons when for any reason the profit from fruit is insufficient.

### DRAINAGE DISCUSSED.

All managers of federal irrigation projects, all engineers in charge of Reclamation Service work, and all heads of legal departments connected with the many reclamation projects now under construction under direction of the government throughout the United States, will meet in El Paso during the annual convention of the International Irrigation Congress, October 14 to 18.

Owing to the number of new questions which will come before it for discussion and settlement, the El Paso congress will rank as one of the most important congresses held since the work of reclaiming lands by means of irrigation was first inaugurated in this country 25 years ago.

### IRRIGATED PASTURES.

In connection with the establishment of live-stock industries on the northern reclamation projects, the use of irrigated pastures as summer feed is almost universally desired. The results secured by experimenters and practical farmers indicate that under favorable conditions and with proper care the stock-carrying capacity of an acre of well-established pasture should be not less than two cows or their equivalent in other live stock. To establish these pastures successfully requires good farming and close attention to details. Information which has been obtained during the past four years shows either that irrigated pastures are already successful or indicates that they can be made successful.

A common cause of failure lies in the belief that land which is unfit for the production of other farm crops should be used as pasture. The use of relatively poor land is justified under some conditions, but to secure a high carrying capacity requires productive soil. It is particularly important that the land be well prepared for irrigation, so that water, which usually must be applied frequently, can be uniformly distributed.

Good seed should be used, and the mixture should include both grasses and clover, so that there will be a

## Branwine Rhubarb

Send for price list for plants and terms under which we contract to take crop for shipping and preserving.

### SALE OF YOUR CROP GUARANTEED

Under our system this crop becomes a big money maker. \$1865 was taken from 3½ acres one season.

### Wesco Seed Co.

73 Madison St., SEATTLE, WASH.

## Everbearing Strawberry Plants

Superb variety, will bear continuously, both spring and fall, of large sweet red berries, very solid and productive. We are still shipping berries. Send for descriptive circular.

W. B. SIMS, Newberg, Ore.

## FOR SALE OR RENT

A 360-acre stock ranch with buildings and dairy equipment complete. A lake and flowing well on the place. Write for particulars.

### H. S. ROYCE

Eatonville, Wash.

## TRAPPERS

We will have some Big Specials to offer Fur Shippers throughout the coming Fur Season. It will pay you to get your name on our mailing list at once.

Your success depends on the Fur House you ship to. Start Right. Ship your first lot to us. Our returns will convince you.

Write today for our free book, "Fur Facts," Price List, Tags and prices on Traps, Baits, Supplies.

The Trappers Fur House

**ABRAHAM FUR CO.**  
29 Abraham Bldg., St. Louis, Mo.

variety of feed and a high carrying capacity. The use of alfalfa as a constituent of the pasture mixture is not generally advisable, chiefly because of the danger from bloat.

## WESTERN WASHINGTON FAIR.

As usual, the exhibits were very complete, attractive and of the ideal high standard at the Western Washington Fair. The arrangement, as usual, was unique, the entire show very instructive and the time spent in observing exhibits restful. Good design and neatness impressed all visitors.

The hog display was larger than usual, owing to a determination to benefit by the high market prices.



## Pull big stumps by hand

Clear your stump land cheaply. No expense for teams or powder. One man with a

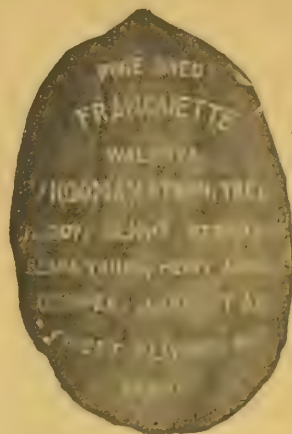
## HAND POWER K Stump Puller

can output 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

Write today for special offer and free booklet on  
Land Clearing

**WALTER J. FITZPATRICK**  
Box J, 182 Fifth St., San Francisco, Cal.

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



## THE VROOMAN FRANQUETTE

This is a distinct type of nut produced in the celebrated Vrooman orchard at Santa Rosa, Calif. It is large, oval, thin shelled, full meat and perfectly sealed, retaining its rich flavor indefinitely, commanding a higher price than any other nut. The trees, young and old, withstand temperatures of 20° below zero. They bloom late, thus escaping late frosts which frequently kill the crops on most other varieties. They are self-pollenizing, which means that an isolated tree will produce nuts while many other varieties must be cross-fertilized. The above three prime requisites are combined in no other variety.

The walnut industry is assuming larger proportions every year. Our profitable nut sections are limited and over-production is out of the question. In the rich mild irrigated sections of the Northwest the walnut bears as early and as profitably as the most favored fruit, besides which there is practically no expense for upkeep and but little harvesting expense and no waste, as it is not a perishable product and can be gathered, held and marketed at the convenience of the grower.

We are propagating and selling the Vrooman Franquette under license from the Oregon Nursery Co., of Orenco, Ore., which holds an exclusive contract from the Vreemon orchard people at Santa Rosa, California.

Write us for special walnut information, giving us particulars as to the elevation, soil and climatic conditions in your locality.

Pears, Prunes, Plums, Cherries, Apples, Apricots and all other staple fruits, large and small, besides Ornamental trees, Shrubbery, Vines, Roses, etc. Leave your name and address, and tell us your probable needs.

## Washington Nursery Co.

Toppenish, Wash.

Nursery on the clean, new soil of the Yakima Reservation. No bugs or tree diseases.



Much waste feed can be turned into pork at little cost and with some peas and mixed grain to round off for the last 30 feed days the enterprising hog farmer will benefit by his visit to the fair for the Berkshires, Poland China and Durocs were all of ideal type. Particularly was the exhibit of 21 Poland Chinas shown by C. W. Shumate, Tumwater, attractive. They were awarded all prizes offered for this breed.

One farmer remarked when returning home that Gibson's Cow Testing demonstration was worth to him more than the cost of his trip. A leading business man of Tacoma said he attended regularly every day, making the fair week to him a restful vacation.

In the experiment station exhibits were a large number of peas, vetch, grains, grasses, corn and potatoes, of interest from the point of varieties best adapted to the uplands and the bottom lands.

The poultry exhibit was fully up to past years.

The entire fowl demonstration was helpful to those who are seriously making poultry raising a profitable

adjunct to their fruit or dairy operation.

The Western Washington Fair this year was helpful and successful in every respect.

#### WASHINGTON STATE FAIR.

The display of beef cattle and hogs was very attractive at the Washington State Fair. J. M. Fruits, of Enterprise, Oregon, with Hampshires, Shumate, of Tumwater, with Poland Chinas, Nelson, of North Yakima, with Durocs, and Simons, of Sunnyside, with Berkshires, all showed a highly perfected type of their breeds. They won the leading prizes. The sheep and dairy stock display was rather light. The county and district fruit and agricultural exhibits, as usual, were very attractive. The machinery display was also large and attractive. Much interest was shown in the boys' and girls' clubs. This movement is laying foundation for standard products and for systems which benefit alike producers and merchants who are to help in the export of surplus farm products. As an educational institution the fair was very successful.

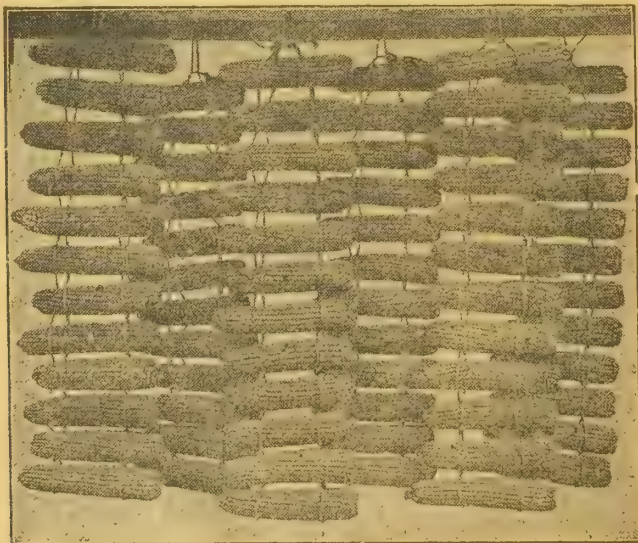
#### SEED CORN SELECTION.

In 13 years' investigations with Woodburn White Dent, U. S. Selection 77, the yield was raised from an average of 63 bushels of dry shelled corn from 1901 to 1907 to an average of 75 bushels from 1907 to 1913. The principal influence producing this increase in yield was the selection and the care of seed corn.

The only proper way to select seed corn is from the stalks standing where they grew, as soon as ripe and before the first hard freeze. As soon as the crop ripens, go through the field with seed-picking bags, and husk the ears from the stalks that have produced the most corn without having any special advantages such

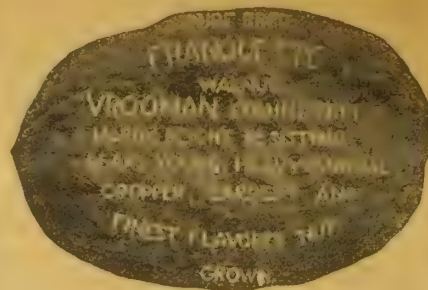
likely to destroy the quality.

The same day seed corn is gathered the husked ears should be put in a dry place where there is free circulation of air and placed in such a manner that the ears do not touch each other. This is the only safe procedure. Good seed is repeatedly ruined because it is thought to be already dry enough when gathered and that the precaution mentioned above is unnecessary. Many farmers believe that their autumns are so dry that such care is superfluous. Seed corn in every locality gathered at ripening time will be benefitted by drying as suggested. If left in the husk long after ripening it may sprout or mildew during warm, wet



as space, moisture, or fertility. Avoid the large ears on stalks standing singly with an unusual amount of space around them. Preference should be given the plants that have produced most heavily in competition with a full stand of less productive plants. In all localities the inherent tendency of the plant to produce heavily of sound dry, shelled corn is of most importance. Late-maturing plants with ears which are heavy because of an excessive amount of sap should be ignored. Sappiness greatly increases the weight and is

weather or become infested with weevils. The vitality of seed is often reduced by leaving it in a sack or in a pile for even a day after gathering. During warm weather, with some moisture in the cobs and kernels, the ears heat or mildew in a remarkably short time. The best possible treatment immediately after gathering is to string the ears. Ordinarily the best place to hang strings of ears is in an open shed or loft. Wire racks are more convenient, and in the end cheaper, than binder twine.



There are several types of Franquette Walnuts of which the Vrooman Franquette is recognized by walnut experts of California and the Northwest as superior to all others in hardness, bearing qualities, size, flavor, color of meat and market value. This type was introduced into America by Mrs. Emily Vrooman of Santa Rosa, Cal., whose orchard now contains 60 acres of this one type.

The Oregon Nursery Co. early recognized the superior merits of this nut and secured an exclusive contract with Mrs. Vrooman for the scions, buds and nuts from her orchard for propagating purposes. We are therefore the introducers and propagators of the only genuine Vrooman Franquette.

Send for literature on Walnut Culture and mention this paper.

## OREGON NURSERY CO.

ORENCO, OREGON

YOU GAIN A WHOLE YEAR BY —

## Fall Planting

### Our Autumn Catalogs

of True to Name

Fruit and Shade Trees

Berries and Bush Fruits

Roses, Bulbs and Plants

Standard varieties and worthy novelties for home and commercial planting now ready.

Ask for Catalog No. 51

## PORTLAND SEED CO.

Portland, Oregon



### Bulbs

For earlier winter flowers indoors:

Paper White NARCISSUS Dz. .40 100 \$2.50

Roman HYACINTHS Dz. .70 100 4.75

China LILIES Each .15 two .25 Dz. 1.50

Postpaid.

Grow in pots or glasses. Sure to bloom



### Keep it oiled

Through the microscope, a strap looks more like a sponge than a piece of leather—it's honey-combed with pores. Through these pores, dirt, sweat and moisture attack the leather fibre and weaken your harness.

## EUREKA Harness Oil

fills these pores—preserves the original strength and appearance of your harness—adds years to its life. Ask your dealer today.

Standard Oil Company  
(California)

## Milton Nursery Co.

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

### Milton Nursery Company, Inc.

Milton, Oregon



**Pull those Stumps Alone**  
with a **Kirstin**

You can do it with our new Double Leverage 6 Speed KIRSTIN. Move and operate it alone. Outpulls 100 horses. Absolute satisfaction guaranteed or your money back. 7 models to choose from.

"My KIRSTIN Outpulls a Steam Outfit That's Operating Here," says J. E. Bartel of Alsea, Oregon. BIG NEW CATALOG TELLS WHY Write for it NOW.

OUR LOW PRICES WILL SURPRISE YOU

A.J. Kirstin Co. 336 E. Morrison St. Portland, Ore.

30 Days Trial



## YOUTHS AT STATE FAIR.

The boys' and Girls' clubs of Washington were well represented at the State Fair, North Yakima. In fact, this youth's organization, under the State supervision of T. J. Newbill, was a prominent feature of this year's events. 37 counties were represented by leaders in the various clubs, such as corn, potatoes, cereals, pigs, poultry and the manual training arts for boys, while the girls were enthusiastic in their canning demonstrations of fruits and vegetables, their needle and garment work. The procession of this representative boys' and girls' clubs attracted much attention and their work was highly praised by all observers. Mr. Newbill deserves much credit for untiring efforts in bringing about united action on the part of so many boys and girls throughout the state in the short time this department has been inaugurated. This movement will do much to induce uniform methods of production and to offer on the market products of high quality and finish within the next five years. These clubs also carry out a feature in educational training that is almost impossible to attain without them; and that is positive proof of responsibility. Boys and girls are taught to plan their work and in every step they assume more or less responsibility in order to avoid disappointing results in the consummation of their tasks.

## BLASTING IN GARDENS.

J. R. Mattern

In most states there is a lack of experimental work on the subject of blasting the soil to secure intensive tillage. There is no need of anyone's waiting for the State to decide whether or not this practice is of value in any particular soil, because to do some of the blasting costs only a dollar or so. If the blasting is done when the ground is dry there is no possibility of harm resulting any more than there is from plowing or harrowing.

Blasting of soil is nothing more than intensive tillage that reaches three or four feet into the ground. Nowhere is intensive tillage more needed than in gardens.

It will not hurt the growing plants to blast right under them when the ground is dry. If the blasting can be done just before a hard rain, the blasting will produce more immediate benefits than if rain does not follow soon. If you prefer to wait till the crops are off, do the work in the fall.

One good blasting in a garden should be of as much good as a dozen thorough spadings to a depth of fifteen inches. For field and orchard crops the same intensive tillage is equally as valuable, and you can find out all about it for yourself by trying small plots in representative parts of the fields. One fifty pound box of farm powder ought to more than subsoil an acre, and if you divide the acre up into several small experimental corners, where you have corn, potatoes, grass, trees, wheat, etc., and watch the results carefully, you should have some valuable data in your possession before long. Bear in mind that, as with any other sort of tillage, the results are not immediate, but come about through the lapse of months and seasons. If you can get leguminous crops planted in

the fall on the blasted ground, the benefits will be very much larger in proportion.

## SOIL DISINFECTION.

Soil disinfection has proved the best method of combatting the damping off disease. Sulphuric acid, copper sulfate, zinc chloride and formaldehyde have given better results than a large number of other chemicals used, in experiments carried on in twenty-one different localities.

It is only possible to learn by trial just which chemical agent will best control damping off in any given locality or on a given soil. Sulphuric acid has given the excellent results. Treatment with this acid not only reduces loss from damping off, but increased germination. The number of seedlings secured in the treated beds has ranged from one and one quarter to ten or even twenty times that secured in adjoining untreated beds. One of the most desirable features of the acid treatment is the reduction in the number of weeds. The saving in the cost of weeding has at one Nebraska nursery more than paid for the cost of the acid treatment. The reduction in the weeds and the stimulation given by the acid treatment has at a Kansas nursery resulted in jack pine seedlings three times the height of seedlings grown in untreated beds.

Sulfuric acid is applied to the seed beds in a solution of water just after the seed is sown and covered. From  $\frac{1}{8}$  to  $\frac{3}{8}$  fluid ounce of acid per square foot is dissolved in from  $1\frac{1}{2}$  to 2 pints of water, and applied with a paraffin-coated sprinkler. Care is necessary in the use of the solution to keep it from the clothes and shoes, because of its corrosive action. Chemical injury may result in some cases to the roots, and it then becomes necessary to sprinkle the beds during germination once or twice daily. When the seedlings have their roots down three quarters of an inch, there is little danger from chemical injury. The Department of Agriculture has a special bulletin dealing with "Injury by Disinfectants to Seeds and Roots in Sandy Soils."

## MEAT EXPORTS.

Our exports of meat now constitute the fifth most important export. For the fiscal year ended June 30, 1916, the United States exported \$270,000,000 worth of meats, a new high record, an increase of 31 per cent over the corresponding period of 1915. In this commodity, export business has practically doubled in six years.

The character of these exports of meat may be understood from the fact that in the fiscal year ended June 30, 1916, the United States exported 50,353,450—of which \$7,461,162 worth went to the United Kingdom; 231,215,075 pounds of fresh beef valued at \$28,886,115—of which the United Kingdom took \$15,148,556, with France and Italy following in second place; 38,060,682 pounds of pickled beef valued at \$4,034,195—of which the United Kingdom took \$1,429,897; 102,645,914 pounds of oleo oil valued at \$12,519,115—of which the United Kingdom took 12,003,390 pounds; 579,808,786 pounds of bacon valued at \$78,615,616—of which the United Kingdom took 339,341,069 pounds, Belgium 60,160,749 pounds; France 52,501,448 pounds, Canada 39,590,591 pounds; hams and shoulders

## Rhododendrons

WASHINGTON STATE FLOWER  
Collected from the Forest

Plants 5 to 10 inches, sent in lots of 10 or 100 plants, postpaid. Transplants also sent postpaid. Madronas, Huckleberries, Spireas, Berries and other wild fruits, plants and flowers at same prices, or collected and potted or transplanted for spring delivery. Write for price list.

JOEL SHOMAKER,  
Olympic Nature Nursery  
Nellita, Washington

## AGENTS TAKE NOTICE

Farmers and fruit growers are getting the highest level of prices for their products in twenty-five years. Our best salesmen are turning in from \$500 to \$700 per week—other men from \$100 to \$500. There is a big opportunity for you to make money this Fall and Winter selling general lines of nursery stock to farmers and others in home orders, including Fruits, Flowers, Shrubbery, Shade Trees, etc. OUR NEW AGENTS CONTRACT IS A WINNER. Any young or middle aged man can succeed. Write at once for choice of territory. Address, PACIFIC NURSERY COMPANY, 122½ Grand Ave., Portland, Oregon.

## WALNUTS Loganberries

These two crops are making more money than anything else for the grower. Planting is being very extensively done in the Pacific Northwest. A steady and certain demand insures you splendid returns from your land.

We can supply you with guaranteed stock, and which should be planted for heaviest returns. Catalogue and prices on application.

SALEM NURSERY COMPANY  
SALEM OREGON

We offer an excellent opportunity to the live, energetic salesman.

## Small Fruit Plants

at

## Who'sale Prices

|              |            |
|--------------|------------|
| Blackberries | Dewberries |
| Raspberries  | Currants   |
| Loganberries | Grapes     |
| Strawberries | Rhubarb    |
| Gooseberries | Asparagus  |

Write for Price List.

F. H. Burglehaus  
SUMNER, WASH.

## WHEAT-VETCH SEEDING.

We are prepared to furnish seed for fall planting, that has been grown on Whidby Island, a very superior variety of spring vetch and winter wheat that yielded this year ninety bushels per acre, with very stiff straw. We will furnish this already mixed in the right proportions. It has been thoroughly recleaned and contains no noxious weeds. The supply is limited, therefore send in orders at once.—C. J. ZINTHEO, Central Bldg., Seattle, Wash.

## Elderly Men!!

### YOUR OPPORTUNITY

Many middle-aged and elderly men are making good money selling our hardy guaranteed ornamentals, roses, fruit trees, berries, etc.

Our field reaches from Montana to Southern California, and from New Mexico to Northern B. C.

Cash Advanced Weekly. — Expenses partially provided. You will be surprised at the business you can get in your own locality.

Write Us Today.—If not interested, perhaps you know some energetic, intelligent man now unemployed.

## Washington Nursery Co.

TOPPENISH, WASH.

Largest between the Rockies and Cascades.

## WANTED

### Men with Gray Hair

Throughout Washington and Idaho we have several good openings for solicitors—elderly men preferred—selling our reliable, non-irrigated stock, including all kinds of Fruit Trees, Shade and Nut Trees, Ornamental Shrubbery, Roses, Vines, etc.

Established in 1867, our company has been supplying planters with dependable nursery stock ever since.

The name "ORENCO" carries with it the assurance of the utmost "Reliability and Satisfaction" in nursery purchases.

It makes selling Orenco Trees easy.

Don't you believe if you were to work as faithfully "selling Orenco trees" as you are now doing you would make more money and make it easier?

Let us explain to you our terms to agents.

Full time men preferred, but part time if desired.

If you can sell trees we want you and you need us.

Many a man is a good salesman but don't know it till he tries. Why not try?

For further particulars write

OREGON NURSERY CO.  
Orenco, Ore.



Sews Leather  
Quick

### MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for two-year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.

### YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2½ gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue No. 10. REIERSON MACHINERY CO., Manfrs., Portland, Ore.



totalling 282,208,612 pounds valued at \$40,803,022; fresh pork totalling 63,005,514 pounds valued at \$7,523,408; 14,708,893 pounds of sausage casings and other products. A large proportion of our exports of meats and meat products is for army use but there can be but little doubt that a sizable business is being built up in this line of export which will remain a permanent feature of our export trade.

### SILAGE A NECESSITY FOR FATTENING CATTLE.

For ten or fifteen years past, evidence has been accumulating that silage is even more important for beef cattle than for dairy cattle. The first experimenters with silage felt that it was necessary to feed fifteen to twenty pounds of corn to fattening steers in connection with the silage, as well as five or ten pounds of hay; they were not willing to give silage a fair chance. But now that corn has become so exceedingly high in price, they have come to see that it may be wise to depend almost altogether on silage. At both the Iowa and the Pennsylvania stations, fattening steers were fed an average daily silage ration of from fifty to seventy pounds, in connection with a very limited grain ration, and with little or no dry rough feed. In the Pennsylvania experiment, the average daily grain ration was three pounds of cottonseed meal, and in the Iowa experiment 4.3 lbs. of corn and two pounds of oil meal. By throwing the burden on silage, it was possible with silage at \$3.50 to \$4 a ton, to make 100 pounds of gain, at a total feed cost of from \$7 to \$8.

But the most astonishing thing about the whole matter is the fact that these steers finished so largely on silage, and never, at any stage of the fattening process, fed much grain, sold practically as high as steers fed very heavily on grain. In the Pennsylvania experiments, the silage steers were valued at \$9.25 per cwt., and in the Iowa experiments at \$9.45 per cwt. In both cases, the steers fed so largely on silage were given a selling price within 5 or 10 cents per cwt. of the steers fed a heavy grain ration. It is worthy of note, however, that the valuations were made by representatives of packing companies or commission firms on the college grounds. There is a bare chance that these gentlemen recognized the signs of the times, and desired to encourage the feeding business by thus professing a willingness to pay fat cattle prices for steers fattened on silage.

The Wallace's Farmer suggests that if the packers are actually willing to pay fat cattle prices for steers finished on an average daily ration of sixty or seventy pounds of silage, together with two or three pounds of corn and two or three pounds of oil meal or cottonseed meal, with possibly a little hay or straw, the result will be a great impetus to the cattle feeding industry. The silo will then become a necessity. It has been almost a necessity during the past five years, but if the packers continue their present attitude toward silage fattened cattle, the time will soon be here when no man who has not a silo will dare venture into the fattening of steers. With silage, a hundred pounds of gain can be made for \$2 or \$3 less per cwt. than without silage.

## THE NORTHWEST HORTICULTURIST AND DAIRYMAN

### WHEAT-VETCH SILAGE.

Twenty-two Tons per Acre; Winter Cropping.

By O. T. McWhorter, Port Angeles, Wash.

The most successful growers of this combination crop here seed it the latter part of September or first of October, using about one bushel each of wheat and vetch. (Spring Vetch.)

It seems to be the practice with a number of farmers to plant this crop late as the last of November, but yields from crops planted at so late a date are often if not nearly always low as compared to the early seeding.

We measure several fields of wheat and vetch and calculated the yields by measuring the crop in the silo.

Field No. 1—2½ acres, on Mr. Roy Stone's place, rate of seeding 70 pounds each of wheat and vetch per acre; seeded in early October—Yield of silage, 22 tons per acre.

Field No. 2—2½ acres, rate of seeding 40 pounds vetch and 80 pounds wheat seeded in early November—Yield for silage, 11½ tons per acre.

Another field seeded in November yielded about 10 tons per acre and same amount of seed was used as in No. 2.

A fourth field seeded in November yielded about 7 tons silage per acre. 40 pounds vetch and 60 pounds wheat used.

Fields No. 1 and 2 are in the same locality and conditions are practically the same. While I do not say that early seeding will increase the yield 100 per cent it had a great deal to do with the high yields in this section. The light amount of vetch used in seeding fields other than No. 1 also had its effect.

Disappointments in seeding this crop can usually be traced to late and improper seeding, and to undrained soil or soils which do not have proper surface drainage.

The yield in case of No. 1 may seem high, but allowance was made for the settling of the crop in the silo.

Many farmers are seeding this crop for soiling and silage, but are getting it in the ground early.

The wheat-vetch combination is more nearly a balanced ration than is vetch grown with oats or rye. The wheat and vetch ripen more nearly at the same time and stands up well until ready for cutting. This combination is paramount as a basic silo crop for dairymen in the Coast Section. It is practically a winter crop growing in the fall and early spring. In many cases the ground can be used again for a second crop the same year.

### BUSINESS EFFICIENCY.

By C. E. Bassett, Specialist in Cooperative Organization, Office of Markets and Rural Organization.

The average individual farmer is himself a small manufacturer, working with the forces of nature to produce certain farm products. There are two distinct ways by which he may hope to improve his financial condition—first, by lowering his cost of production, and, second, by increasing the income received from the sale of his products.

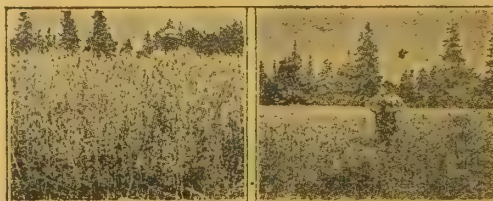
It has been found from the surveys made by the Office of Farm Management that the minimum efficient unit is the farm that furnishes adequate employment throughout the



### Pay For a Litchfield Spreader Out of the Profits It Makes

We mean just what we say—get a Litchfield NOW, use it this fall and spread the manure on your fields that is going to waste—cash in next summer on greatly increased crops and pay for the Litchfield AFTER YOU HAVE RECEIVED YOUR PROFITS.

Hundreds of Litchfields are in use in the Northwest and every one is earning many times its cost every year for the farmer who owns it. A Litchfield will pay you AND PAY YOU BIG!—long before you have to pay for it. Ask the man who owns one!



A Litchfield Crop

No Litchfield—No Crop

Actual photographs taken on the farm of A. B. Marshall, Albany, Oregon, showing field where Litchfield had been used and field where it had not.

Write Today for Full Particulars of This Special Offer!

Look at these pictures. See what a difference where the Litchfield is used? You can do it too! Use your waste manure to grow bigger and better crops. The Litchfield spreads it evenly and quickly, can't possibly get out of order—is built down low and is easy to load. Write today! Be one of the few to profit by this great offer

Oldest and Largest Independent Wholesalers of Farm Machinery in the Northwest

**R. M. WADE & CO.**  
SINCE 1865  
PORTLAND, ORE.

Warehouse & Main Office Occupies Entire Block. 322 Hawthorne Avenue

### 25 Per Cent. Discount

I will allow a 25% discount on all orders for nursery stock accompanied by the cash, until a near future date.

A complete line of fruit, shade and ornamental trees, roses, shrubbery, etc.

Instead of putting agents on the road, I will give their commission to you.

Satisfaction guaranteed in every respect.

**RICHMOND NURSERIES**

RICHMOND BEACH WASHINGTON



### Christopher Nurseries

Select your roses and ornamental plants from choice acclimated stock which satisfies. Send for our catalog at once for information about new choice varieties of deciduous and evergreen plants and description list of fruit trees of all kinds.

Nurserymen for four generations.

Satisfaction assured.

**JOHN A. STEWART & SON,**  
Christopher, Wash.

### Twenty-five Per Cent Reduction

On all apple, pear, peach, prune, plum, cherry, apricot, nut, shade and ornamental trees, berry bearing plants, flowering shrubs, vines, hedge plants, roses, etc.

We need more room in our nurseries for further planting.

All stock clean, healthy and thrifty. Grown on virgin soil two years from sage brush.

Most complete stock in the Northwest from which to select.

**ALL STOCK TRUE TO NAME**

Send today for special price list and descriptive catalog.

**O. & F. NURSERY CO.**  
BOX 217B, WAPATO, WASH.

### Vetch Seed

We make a specialty of this great fall crop and can furnish in any sized orders at the very lowest market prices.

### Clover and Grass Seeds

We are in a position to quote very attractive prices on the highest quality seeds and ask you to send us a list of what you want for prices.

**D. A. White and Sons**  
255 State St., Salem, Ore.



year to the average farm family. Experience has also shown that combinations of farmers for cooperative production are rarely advisable, but the farmers in a given section usually produce the same assortment of crops, and their farm needs for supplies, such as implements, fertilizers, seeds, spray materials, and packages, are practically the same. Many of these requirements can be anticipated, but the common practice is to depend upon local dealers to carry these standard articles in stock, awaiting the day when the farmer wishes to use them. In many sections it is customary in the spring for farmers to ask the local merchants to charge the amount of all purchases until harvest time in the fall. This practice compels the merchant to buy in small quantities, shipments being received under relatively high local freight rates. He must buy on credit or else borrow large sums of money, for the use of which he must pay interest. The dealer must pay cartage charges and must own or rent stores and warehouses. He has taxes and insurance to pay on his stock; he must employ clerks to wait on his customers, and pay liberal advertising bills to attract trade. Frequently there are expenses for the delivery of goods. Usually where credit is extended an advance in prices must be made to cover the occasional loss due to bad accounts.

If customers need or require such forms of assistance, they have no right to complain if the merchant includes a reasonable charge for the service in making the price for his goods. In fact, much of the complaint about present-day high prices is unreasonable, as increased prices frequently are due to the increased service required by consumers and rendered by dealers. If people insist upon being waited upon, they must expect to pay those who thus serve them.

#### Elimination of Waste.

In the farmers' general plans for improving their condition it is necessary for them to take advantage of the cooperative principles for conducting their business, to the end that they also may be able to eliminate waste. Efficiency is the watchword, and the farmer should pay for necessary and efficient service only. In case he finds that he can serve himself more efficiently than others are serving him, if he can install and operate his own business machinery, arrange to pay cash, or furnish his own credit, he should do so. The trade should and usually will consent to meet him on this thoroughly sound basis.

If it is good business and entirely proper for manufacturers, wholesalers and retailer to unite in their respective organizations, not to control prices or restrain trade, but for greater business efficiency and to eliminate waste, what argument should induce farmers to refrain from similar action to improve their business? What can the manufacturer gain by such organization which the farmer can not? Is the average intelligence of the manufacturer less than the average intelligence of the American farmer? If it is advisable for the manufacturers and dealers to federate into State and National associations for the above-named purposes, by what line of reasoning do

some conclude that it is unnecessary or absolutely improper for the farmers to organize even on a community basis?

#### DOUGLAS COUNTY WHEAT.

Marcus a Favored Hard Variety.

Douglas county, Washington, and its tributary territory, will ship between 800,000 and 1,000,000 bushels of wheat this season, is the statement of J. J. Keegan, of the Northwestern Mercantile Company of that district, and formerly of Wenatchee. He says:

The yield to the acre has exceeded the estimates, and it is now expected that the average yield will run more than thirty bushels to the acre. A number of growers have reported yields of more than thirty-eight bushels. Only sufficient wheat to cover the cost of harvesting is being sold. The bulk of it is being held for higher prices. At Alstown the warehouses are filled and they have begun to pile wheat outside.

Around Douglas threshing is just about half over. The combines are finishing up, but there is still lots to be threshed.

Marcus wheat, Mr. Keegan believes, will within a few years be the leading variety in Douglas county. Imported from the Dakotas, it has done exceptionally well, giving big yields of good quality. It is a hard wheat and is especially desirable for flouring, and sells better than either Turkey Red or Bluestem. It had a premium of 2 cents a bushel over Turkey Red, selling for \$1.29.

#### RURAL CREDIT ACT.

The practical work of a national farm loan association is done by the secretary-treasurer. He writes and answers letters, keeps the books, handles the funds, secures the loans from the land banks, pays over the money to borrowers, and does all the active work of the association for the members.

The loans are made on first mortgages on farm lands. The mortgages may run not less than 5 years nor more than 40 years. The borrower himself decides the length of time his loan shall run. The interest can not exceed 6 per cent and may be lower. Every six months, or once each year, the farmer pays the installment on his debt. This includes interest, part of the debt itself, and a small amount to cover expenses of the association. The secretary-treasurer makes the collections, gives his receipt for them, and sends the money collected to the Federal land bank. Thus most of the work of the associations is done by this officer. That is why he is allowed a small salary.

The Federal land bank which receives the application for loans and other papers from the association then sends an appraiser to examine the land and the financial condition of the proposed borrowers. If these conditions are found satisfactory, the land bank forwards the papers to the Federal Farm Loan Board with their recommendation. On approval by the Federal Farm Loan Board, a charter is granted to the applicants to do business in their district, the charter being forwarded to the association by the Federal land bank.

Farmers can invest in these securities and become their own loan association. The rural credit act is

## PORTLAND WHOLESALE NURSERY COMPANY

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PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.  
A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

#### SPECIALTIES

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.  
Write now.

## GROUND LIMESTONE

The WASHINGTON PORTLAND CEMENT COMPANY and the SUPERIOR PORTLAND CEMENT COMPANY, both with plants at Concrete, Skagit County, Washington, are the greatest producers of GROUND LIMESTONE on the Pacific Coast. Their products are superior, being ground 100 mesh fine, 90% Calcium Carbonate. For prices per ton and in carload lots of not less than 25 tons, write either firm.

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CEMENT CO.,  
809 White Bldg.,  
Seattle, Wash.

SUPERIOR PORTLAND  
CEMENT CO.,  
Northern Bank Bldg.,  
Seattle, Wash.

## Milton Nursery Co.

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request. Agents wanted. Attractive proposition to offer.

**Milton Nursery Company, Inc.**

MILTON, OREGON

## MONTE VISTA NURSERIES

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SAPPOOSE, OREGON

**The Puyallup Nursery** A. Lingham, Prop.  
702 Pioneer Ave. E., PUYALLUP, WASH.

Hardy Ornamental Trees and Shrubs a specialty.  
Specimen Evergreens, Rhododendrons, Azaleas, Hollies, Perennials, Roses, Bulbs, etc.  
Write for list.

## Seattle Seed Co.



810 Western Ave. - Seattle

Early Fall Sowing with our choice grass seeds or combination Vetch Wheat, enables the dairyman and farmers of the coast section to get full benefit of the winter cropping season.

Send for our catalog today

## FRUIT AND POULTRY

We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**  
We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature.  
Twenty years of satisfactory service to growers our best recommendation.  
923-5 Railroad Avenue, CHAS. UHLEN, Spokane, Wash.



virtually a farmers' charter at a fixed maximum rate of interest.

### SILAGING CORN.

When the silo first came into use it was thought necessary to fill it with very green succulent growth. This is now known to be an erroneous idea, and the silo is regarded much as a storeroom or food preserver, the value of the silage depending to a very great extent on the nutritive value of the crop with which the silo is filled. To this end it is advisable that the corn shall have reached a degree of ripeness indicated by rather hard, well dented or glazed kernels and partially dried husks before it is placed in the silo. There is a week or ten days when the ears are in this condition and the stalks still contain sufficient sap to cause the silage to pack well in the silo. It is even better to add a little water to accomplish the latter purpose than to cut the crop before it has attained its full feeding value.

### ROAD EXPENDITURES.

An increase in the use of better and more expensive types of roads is shown by recently compiled statistics. This development has been due, in large part, to the great increase in automobile traffic. It is estimated that there are now approximately 2½ million automobiles in use on the roads of the country, or 1 car for every mile of road. This present motor traffic is in excess of traffic of all sorts 12 years ago.

The cash road and bridge expenditures of the United States averaged only \$28 per mile of rural roads in 1904. In 1915 this average had grown to \$109 per mile.

### PERSONAL CHARACTER AND SHORT-TIME FARM LOANS.

"Factors Affecting Interest Rates and Other Charges on Short-Time Loan," by C. W. Thompson, Specialist in Rural Organization, U. S. Department of Agriculture, gives the following discussion of the bearing that the borrower's personal characteristics have on his ability to obtain short-time loans on satisfactory terms.

The borrower who is known to be a man of honesty and integrity and who shows ability and judgment in the conduct of his farm business will ordinarily command the confidence of his banker and obtain credit on terms relatively favorable for his class of loans, whereas the individual who is uncertain in his personal character, erratic in his judgment, and irregular in his business habits will be considered a less desirable risk and, if he obtains a loan at all, usually must pay a higher rate of interest. In any case, if credit is to be extended wisely it is just as important to discourage its use among those who can not be trusted as it is to grant credit to trustworthy borrowers who will use the borrowed money profitably and repay it promptly.

Oftentimes the borrower may be honest and upright in his intentions, but may fail to appreciate the importance of being prompt in meeting his obligations. Possibly he thinks that a few days after the date of maturity is soon enough to make payment, and that a little delay is unimportant. He may not stop to consider that extra work and expense are involved when notice must be given of overdue paper, or that bank examiners

do not take kindly to notes that are overdue.

Again, the business ability and business habits of the farmer are tested when the banker asks for a statement of the borrower's business. This information is needed by the banker as a basis for intelligent rating. If the borrower is in the habit of keeping accounts and can explain the nature of his resources and liabilities and thus indicate accurately his financial standing, the wisdom of granting a desired loan as well as the proper terms thereon readily can be determined. On the other hand, if this information is lacking and the banker is in doubt about the safety of a particular loan, he is likely to charge up his uncertainty to the borrower's account in the form of a higher rate of interest.

The requirement that a borrower shall submit a statement of his business is being applied by bankers in their dealings with merchants and manufacturers. Accordingly, business men in general have become more or less familiar with this requirement, and are prepared to furnish such a statement whenever it is called for. Some bankers, in inaugurating a similar plan in connection with their farm loan business, are supplying farmers with especially prepared blanks, or rate sheets, on which the farmers furnish the desired information.

### CORN BINDERS.

The corn binder with bundle carrier is satisfactorily used in cutting corn of average or small size on land that is not very steep or stumpy. On the comparatively level prairie land of the North Central States the corn binder is very generally used in cutting and shocking corn. In light corn or on level land two horses will suffice, but for faster work or heavy corn the use of three or four horses is much more satisfactory. Three men, one to run the binder and two to shock, and two teams can cut and shock about 7 acres of corn a day. However, conditions vary to such an extent regarding the weight of the corn crop, the lay of land, etc., that it is impossible to give figures that will apply to all cases. In sections where the corn binder is successfully used the principal objections to its use are the cost of twine which remains upon the fodder but a short time, and the knocking off of ears in the process of binding. In almost all cases the quantity of corn knocked off by the binder is great enough to warrant driving a wagon over the field and gathering the ears from the ground after the corn is cut and shocked. This is necessary, because the presence of the shocks in the field prevents the turning in of hogs or cattle to gather up the ears knocked off by the binder.

The use of a binder with a bundle carrier saves much of the hard labor of cutting and shocking, and the greater ease of handling the fodder when bound into bundles of convenient size saves labor enough to compensate for the twine used.

The stubble cutter should be attached to the corn binder whenever possible, as the early cutting of the stubs hastens their decay and puts the ground in a better condition for the following crop.

## FALL SOWING

In the Coast Section there is more early fall sowing this year than usual of Vetch-Wheat combination, clovers, and other grass seed to produce the bumper yields for next year. Orders should be placed at once for the required seeds. Our stock is clean, of highest germinating quality and we ship promptly. Send for our catalog, from which to select for complete seeding and farm machinery equipment.

### Pooles Seed & Implement Co.

1507 Pacific Ave.

Tacoma, Wash.

### ORNAMENTAL PLANTS

of the very choicest selections at reasonable prices. Flowering shrubs, evergreens, roses and hardy perennials, well shaped stock. Submit your planting needs for design.

### SANDVED NURSERY CO.

1803 39th St. No., (On Madison St. Car Line)

Seattle, Wash.

## VETCHES

### New Crop of Seeds Now Ready

Write for prices also on all other Seed for Fall sowing.

Send for Catalogue of Grass Seeds, Trees, etc.—Full of Valuable Information for North Pacific Farmers

## J. J. BUTZER

The Seed Man, 188 Front Street, Portland, Ore.

## Plant Pear, Walnut and Ornamental Trees

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

### QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## GOLDEN SEAL and GENSING \$8000 to \$20000 per acre at maturity

IF YOU HAVE SOIL AND LOCATION

Demand is good for good roots. I am booking orders now for seed and plants. Five miles of beds open to inspection.

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R. D. 1, Box 300, Seattle, Wash.



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*the Standard Oil for Motor Cars*

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)

From Asphalt-Base Crude —the crude endorsed by Lieut. Bryan, a U.S. Government Expert on motor cylinder lubrication, in his statement before the American Society of Naval Engineers.



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### Some Butter Marketing Problems

By W. E. Turner, Seattle.

No matter how efficient or conscientious a salesman might be, he cannot get outside prices for butter of only ordinary or poor quality. There is always too much inferior butter on the market and rarely an excess of fancy goods, and everybody is constantly insisting upon being furnished with a high scoring article, says Mr. Turner in the Rural Spirit. One might think that if the quality is off, it can easily be moved by cutting the price a little, but when fine goods are scarce, it is frequently impossible to sell poor quality by cutting the price, because buyers are not looking for price, but want quality.

There are some brands of butter coming to our market weekly which are always fancy, which always run uniform. Buyers are always clamoring for it and, even when the market is weak, there is no trouble to dispose of these brands quickly and at good prices, and when the market is strong and goods are scarce, these particular brands will always bring a premium over the top of the market. I do not think I am making any misstatement when I estimate that 30 per cent of the butter which comes to the Seattle market is strictly fancy, and the other 70 per cent varies from fair down to quality which can only be described by the word "rotten."

I was a shipper for fifteen years before locating in Seattle, and I always thought that my butter was fine and if it did not bring a fancy price, I was disposed to lay the blame at the door of the man who was selling it; but since I have been on the selling end and can look at the matter from the opposite standpoint and see what the trade demands before they are willing to pay the outside figure, I realize that I was mistaken. Furthermore, butter may have had good flavor when taken from the churn, but goes off rapidly before reaching the market.

A vast amount of money, estimated at approximately \$25,000,000 annually, is going to waste because of the production of so much inferior butter in the United States, and the cream producer is at the bottom of the whole proposition. The making of a wise, intelligent butterfat producer out of the average farmer is the great and paramount question in dairying today.

The point is this: The price at which creamery butter sells depends entirely upon its quality; the quality depends almost wholly upon the purity and cleanliness of the cream; the quality of the cream depends wholly upon the farmer who produces it. There you have the chain of causes that leads to high-priced butter. The responsibility for the making of butter that shall bring the highest price and the highest profit to the cream producer rests upon the farmer in the proportion

of at least 75 per cent, and the buttermaker is responsible for the other 25 per cent. It very rarely occurs that we find a buttermaker who is so unskillful as to make poor butter out of good cream, but there never was a buttermaker who could make fancy butter out of poor cream.

#### The Package.

Then care should be taken in furnishing an attractive package in which to market the butter. If you creamery managers were to advertise for a buttermaker and two presented themselves at your office and you were satisfied that both had equal ability, but you noticed that one fellow's ears were dirty, he had a week's growth of beard on his face, and he had not had a haircut for two months, whereas the other fellow was clean and attractive-looking, you would be likely to give the job to the man who made the best appearance; and the same thing applies to a butter package, and it is a big mistake for a buttermaker to ship in an inferior package, presenting an unattractive appearance.

I have one factory in Oregon that ships butter to me frequently. The package is clean, bright and attractive. It is put up in the same manner, week in and week out, and I want to say to you that its attractive appearance frequently sells the butter, when it might not sell nearly so readily under other circumstances. I wish that we might have a federal law, or at least a state law, which would compel every creamery to use exactly the same size package and the same style package.

I have had jobbers tell me not to send them any more butter from certain factories because the cubes were so unusual in size and shape that it is a nuisance to cut them up. One of the objections our trade frequently raises is the lack of uniformity, and one advantage the larger and more up-to-date creameries enjoy is that their butter runs the same, week in and week out. I find that even small shipments of twenty or twenty-five cubes from one factory will not run uniform, and this is due, doubtless, to the fact that one or two cans of poor cream have spoiled the churning, and the reputation of that factory then is lowered and the buyer is skittish about taking it on when it is offered to him.

#### Shrinkage in Weights.

Experience has taught me that there are a great many cases of unnecessary shrinkage that could be avoided by our buttermakers if they would prepare the packages containing the butter properly, paraffining thoroughly, weigh the butter at the proper time, and also use scales that can be depended upon to be accurate.

A great deal of the butter made today has a leaky body. It seems some buttermakers cannot be convinced that the temperature at which the cream is cooled has a great influence on the body of the butter; also the temperature used in churn-

## GUERNSEYS

### Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

#### SKYKOMISH VALLEY HERD

##### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

HERMAN STEFFEN  
MONROE, WASH.

#### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

A. E. SMITH CO., Sumas, Wash.  
(or White Building Seattle)

### Pure Bred Holstein Cattle

Our herd bull is Sir Korndyke Ormsby Piebe, whose grandsire Sir Pietertje Ormsby Mercedes is the sire of the world's record milk and butter cow, Queen Piebe Mercedes, which gave 30,145.4 lbs. milk and 1403.8 lbs. butter in one year.

The cows and bulls sold from our herd during the past years are all making splendid records. Those who wish youngsters of high productive quality and carefully raised stock will find satisfaction here.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH YAKIMA, WASH.

### Hope Farm Guernsey Calves

**FOR SALE**—Well marked, large Registered bull calves, from dams on official yearly test that will exceed 600 lbs. butter fat. May Rose and Glenwood families. The sire of our herd bull is from a cow with butter fat record of 505 lbs. and sired by a son of Glenwood Boy of Haddon, sire of 26 A. R. cows, from Selma of Pinehurst record 762.88 lbs. butter fat. His dam was first in her class at National Dairy Show and sired by Lord Mar, Grand Champion on the Island and at the National Dairy Show; also sire of 29 advanced registry cows.

H. B. DOUGLAS, Ferndale, Wash.

### A Rare Opportunity for High Producing Jerseys

I have decided to offer all of the calves that are born this year from my high producing Register of Merit cows, only excepting Olympia's Fern's offspring. Some of these cows are making over 800 lbs. butter, and others have already done so.

#### WHO IS OFFERING HEIFERS FROM 800-POUND COWS?

Look over the advertisements and then you will have to come here to find them.

E. L. Brewer

Satsop, Wash.

### REGISTERED HOLSTIEN BULL FOR SALE



Sired by a son of Sir Concordia Wild Rose De Kol, whose six nearest dams averaged 29.72 lbs. butter in 7 days. Health guaranteed. Good dairy type. His dam tests 4 per cent. He will make a valuable sire. Write for price and pedigree.

Firoaks Farm  
R. D. Wilson, Prop. R. D. 1, Tacoma, Wn



ing, washing and working has a big influence on the body. Anyone using high temperatures or doing his work in a hurry, overloading the churn in order to do his work fast, as a rule has poor, leaky-bodied butter, and this kind of butter is bound to shrink between the creamery and the market. A great many of our creameries have poor refrigerators. Some of them have only what we might term ice boxes, which have no circulation of air. The ice, in some cases, is on the floor, and in others overhead, the water leaking all over the cubes, and the temperature is too high. Some of our outtermakers are careless about keeping the refrigerators properly iced, and it is in those cases that I find complaints about large shrinkage.

The time to weigh the butter is when it is to be hauled to the station, not from the churn, as butter will shrink standing in a poor refrigerator for a few days. There is also a shrinkage between the creamery and the market, depending upon whether the butter is shipped under refrigeration or not. I have had butter arrive during hot weather with the nails drawn from the cubes, butter oozing out of the package and probably as much as two or three pounds per cube was wasted in this manner. This, of course, was shipped by a creamery where they were not able to get refrigerator service; but if the buttermaker had been thoughtful, he could have saved a lot of this shrinkage by nailing a wire strap around the cube to prevent the package breaking open.

#### How to Prepare for Export.

The dairy business is growing rapidly in this Northwest, and I want to say to you with all the emphasis I can command, that the quality of a large percentage of our butter must be raised very, very materially or else it cannot be sold at a price which will equal the cost of production. This year there were 3,000,000 pounds of butter exported from California to Australia, and that the portion which was produced in Oregon and Washington proved decidedly unsatisfactory. The San Francisco fair attracted large crowds and they consumed a lot of butter, so that I presume there was a total of 5,000,000 pounds of our western butter that went into channels that are not likely to be available next year, and still there was so much butter on hand that any but the finest goods did not sell readily. California is rapidly growing as a dairy state, as is also Washington, Idaho and Oregon, and if we have as great an increase in production next year as we have had this year, the creamery that does not make a piece of butter which is strictly A1 is going to find it extremely difficult to market their goods. I do not think the time will ever come when there will be an over-production of fancy butter. It will always be wanted and at prices which will be profitable to the producer, but I do now think that the time is very close at hand when poor butter will sell as low as 20 cents. Consequently, creamerymen must notify the producer the way the thing is working and if the producer is unwilling to furnish the sort of raw material out of which fine butter can be made, it would be better for him to withdraw from the business

of producing butterfat, because he certainly will be driven from it by the losses which he will sustain.

#### CHEESE AND BUTTER.

There is about one per cent less butter and nearly three per cent less cheese in cold storage this year, as compared with last, in this country. The usual stiff prices will prevail for the next few months.

#### IMPROVING BUTTER.

The adoption of more careful methods of handling milk and cream and improved practices in the making of farm butter will reduce rather than increase the trouble incident to home production of this food, say dairy specialists of the U. S. Department of Agriculture, and will result in a superior product which can be sold more easily and for a better price than the average farm butter. Last year about thirty million pounds of butter, much of which originated on the farm, was washed or renovated because it was of such poor quality that it could not be profitably offered on the regular butter markets.

#### Churn Cream Only.

Cream alone should be churned. It may be skimmed as soon as it rises or may be separated by a mechanical separator. The latter plan is the more efficient, and though requiring a considerable initial outlay often will be profitable. The cream should be set aside in a clean place by separate milkings. A temperature of 50 degrees Fahrenheit or lower should be maintained until from 12 to 18 hours before churning time, when the various batches should be stirred together well and brought to a temperature of about 70 degrees Fahrenheit by placing the container in a bucket of warm water. One of the first acts of the farm housewife who decides to adopt improved methods should be to purchase a dairy thermometer. Temperature plays an important part in the development of flavors in butter, and always should be determined with fair accuracy. After the cream is mixed it should be kept at approximately 70 degrees Fahrenheit until just before churning time, when it should be reduced to about 58 degrees Fahrenheit where this is possible (or to such temperature not above 65 degrees Fahrenheit as to complete the operation of churning within 25 or 30 minutes).

#### Churning.

The barrel type has been found by dairy specialists to be one of the most satisfactory churns. The dasher or plunger type requires a somewhat greater expenditure of labor. Earthenware churns are especially undesirable unless perfectly glazed, since if pores are exposed they absorb milk and cream, which later decay. Churns with mechanical devices inside them are difficult to clean and sometimes injure the body of the butter.

The churn should be scalded preparatory to churning, but should be cooled with water before the cream is placed inside. The cream should be poured in through a coarse strainer. Every few minutes during the early part of the churning gas should be allowed to escape from the churn. If the temperature is right the churning should require about 25 or 30 minutes. The process is completed when the granules of butter are about the size of large wheat kernels. The buttermilk should then be

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For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

## \$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

**Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame—Open Milk and Cream Spouts.**

**30 DAYS' FREE TRIAL GUARANTEED A LIFETIME**

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it along side of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

Albaugh-Dover Co., 2187 Marshall Blvd., Chicago, Ill.

No. 5 1/2  
Over 75,000  
Now in use

#### GUERNSEY BULL FOR SALE

My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnar 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

**M. S. Shipley, Proprietor**  
PLATEAU FARM,  
Haller Bldg. Seattle, Wash.

#### MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Koliander's Eminent, whose dam is Veda Koliander, produced 15,243 pounds milk and 896 pounds butter in 12 months. Write for prices.

**B. C. CRABTREE, Prop.**  
R. F. D. 1 Lynden, Wash.

#### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

**J. H. Taylor**  
Montesano, Wash.

#### Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

#### Prices

For Ten Cows, Size 10x17 1/2 in.  
6 Sheets for \$ .25, Postpaid  
15 Sheets for \$ .50, Postpaid  
25 Sheets for \$ .75, Postpaid  
50 Sheets for \$1.25, Postpaid  
100 Sheets for \$2.00, Postpaid  
Address

Northwest Horticulturist and Dairyman  
P. O. Box 1604 Tacoma, Wash

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### STALLS and STANCHIONS

### Litter and Feed Carriers

Strong. Practical, Durable.

Write for special Catalog.

Everything for the Dairy, Cheese Factory and Creamery.

### Dairy Machinery Co.

907 Western Ave. Seattle, Wash.

## Holstein Bulls, World Records

The dam of my herd bull is Lutscke Valé Cornucopia, the world record milk cow. Young bulls for sale from this breeding.

**E. W. McGEARY,**  
Friday Harbor, Wash.

**STOCKMEN, INVESTIGATE KAR-NITUM.** It will mean money to you. Here are some facts: Kar-Nitum will eradicate the tubercular germ. Will prevent the disease. Kar-Nitum has restored tubercular cattle in quarantine by the State, and after repeated tests were made released by authority of the Commissioner of Agriculture and given clean bill of health. Worthless tubercular animals have been sold for fancy prices after receiving one year's treatment. Kar-Nitum will protect your animal and keep her in a high state of health. Write for information. Kar-Ru Chemical Company, Tacoma, Wash.

## BLACK LEG

LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable, preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.  
10-dose pkg. Blackleg Pills, \$1.00  
50-dose pkg. Blackleg Pills, \$4.00

Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.

The Cutter Laboratory, Berkeley, California



drained off and the butter granules repeatedly washed with cold water while still in the churn. The washings should be continued until all milk is removed. Under no circumstances should working be depended on to remove surplus milk.

#### Working and Packing.

When the butter is free from all milk it should be taken from the churn with a paddle and placed on a worker. The hands should never touch the butter, both on account of sanitary reasons and because the body warmth may melt the fat. The working should be done carefully to avoid making the butter greasy. Before the butter is worked, fine salt should be added at the rate of about an ounce per pound of fat.

The butter should be prepared for market in a rectangular mold since when in this shape the product is more easily wrapped and handled and is more pleasing to customers. Regular parchment butter-wrapping paper should be used around the prints, as ordinary waxed paper tears easily and sticks to the butter. The placing of the wrapped prints in pasteboard boxes is a desirable final step, as it protects the package, gives it a better appearance, and permits the use of the maker's name or trademark as an advertisement.

After the butter-making operations are completed the churn should be rinsed carefully with warm water. It should then be scrubbed with hot water, cleansing powder and a fiber brush, and finally should be scalded and set in a clean, sunny place to drain and dry.

#### CARE OF DAIRY CALVES.

Careful attention on the part of a dairyman during the two weeks that follow a calf's birth, says the Weekly News Letter of the Department of Agriculture, will often mean the ultimate addition to his herd of a large, well-developed milking cow, instead of a sickly, undersized, stunted animal. The problem of raising calves is today a more complicated one than when it was customary to feed a larger amount of whole milk. The dairyman will therefore find it to his advantage to take the best possible care of his calves from the very beginning.

Immediately after birth the navel of the calf should be washed with an antiseptic solution and tied with a silk thread in order to prevent infection. For the first feed the calf should have the first milk from the cow after calving and should have its mother's milk for several feeds thereafter. The sooner the weaning takes place the better, but ordinarily it should not be postponed later than the fourth day. The sooner the calf is weaned the more easily it is taught to drink. When first fed from the pail 8 to 10 pounds of milk a day, fresh and warm from the cow and divided into two feeds, are sufficient. The feeding times should be as nearly regular as possible, and at first it is advisable to feed more than twice a day. The amount fed should be constant; and to insure this scales should be used, as variation tends to get the digestive organs out of order. At all times the utmost care should be taken to prevent any digestive disorder, as all such trouble hinders the growth and development of the animal. Calf scours is the most common indication of this condition.

The following-named precautions, to a great extent, tend to prevent scours:

Feed regularly.

Be sure that the milk is always sweet and warm.

In feeding use only clean pails.

Feed the calf a little less than it wants.

Reduce the amount of milk one-half if the animal becomes sick.

The amount of milk fed can be gradually increased until at the end of the second week the calf receives from 14 to 16 pounds of milk a day. At this time the gradual substitution of skim milk for whole milk may commence. Hay and grain should be placed before the calf at this period, and it will be found to nibble at them a little. At the end of the third week the substitution of the skim milk will be complete. By slow changes the milk can be increased thereafter until 20 pounds a day are fed; this amount will be found sufficient when fed with the grain and hay. If skim milk is plentiful more may be fed, but the added amount will not give proportionately better results.

Corn meal, bran, and oil meal, mixed in the proportion of 3, 2 and 1, make an excellent grain mixture. This grain when fed with plenty of fine clover hay makes an ideal supplement of skim milk in balancing the ration.

Calves should be allowed all the grain that they will eat until they consume 3 pounds a day; from this point the feeder should use his judgment as to whether an increase is justified.

The calf, from the time it is 2 weeks of age, should always have access to plenty of clean, pure water.

The general practice is to feed calves skim milk for from two to six months. In the latter case, with fall calves the time of final weaning from milk comes in the spring, when pastures are ready. Under this system the calves usually make excellent growth during the entire period without any break in gains.

#### MONTESANO COWS.

About 15 per cent of the 363 cows in the Montesano Testing Association are good for from 400 to 500 pounds butter a year. While the average of the entire list is good, the lowest producers keep down the average profit margin of the district. In the course of time they will be replaced by higher quality stock which will be done through breeding, selection, use of pure-bred sires and better feeding.

Those who had cows which went above the 40-pound butter fat mark for the month were:

Murphy Bros. high mark of 82.2 lbs. fat with grade Jersey cow. Others: Messrs. Taylor, Simons, Smith, Brewer, Orland, King, Askew, Polson, Gochnour, Valentine and Porter Bros.

Olympia's Fern, owned by E. L. Brewer, produced with one-half of her udder, nearly twice as much as the average cow in the association. Four two-year-olds produced over 40 lbs. fat for the month, one of these 52.7 lbs. It will be noticed that we have on the list twelve cows which have been milking over seven months, four of which have milked over eight months and three of which have milked over nine months.

During the month of August there were 443 cows in the association, 363

## A. J. J. C. Jerseys For Sale

Having more Jerseys than my barn will hold, I am obliged to sell a half dozen of my foundation stock. They are splendid cows, and will prove a good investment to any one wishing to start a herd of registered Jerseys. Also a few young bulls sired by Torono's Olinda's Pogis, from Hood Farm, Massachusetts. Will sell for cash or good notes.

CHARLES RICHARDSON  
1020 Realty Bldg.,  
TACOMA, WASH.

## AYRSHIRES

Three splendid young bulls, grandsons of Peter Pan, one a son of King Marcus. Their dams are heavy producers. Beautifully marked. For prices write

F. I. MEAD  
524 California Bldg., Tacoma, Wn.

#### HOLSTEINS

Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

CLOVERIDGE FARM,  
Seghers, Oregon. W. K. Newell.

#### JerseyBulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

EDWIN PETTETT  
Dungeness, Wash.



Purebred Registered  
HOLSTEIN CATTLE.  
Send for free illustrated  
booklets. The Holstein-  
Friesian Assn. of America,  
Box 284 Brattleboro,  
Vt.

#### HILLCREST FARM GUERNSEY

Herd bull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat, his 5 closest female kin have A. R. records that average 620 lbs. fat. At present offer 2 good bull calves at low prices, quality considered. Females for sale occasionally.

Also have for sale High Grade Guernsey Cows.

C. G. HENKEL,  
Opportunity, Wash.

#### FOR SALE

High Grade Guernsey Bull Calf, from heavy milking cow with 5.5 test. First check for \$20.00 takes him.

W. H. FRANKLIN,  
Milltown, Wash.

#### Solid Fawn Jersey Bull Calf

Born Dec. 23rd, 1915. Dam Imported and in Register of Merit with record of 9486 lbs. milk, 598 lbs. butter; full sister with record of 425 lbs. butter and another heifer by same sire now making above 50 lbs. fat per month with first calf. This calf is a good one.

David C. Dilworth Buckeye, Wash.

#### AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUE

North Yakima, Wash.

FARM PROPERTIES—Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. DANIEL MCGREGOR, Berlin Bldg. Tacoma, Wash. Established over 30 years.

#### HIDES WOOLS - PELTS FURS - TALLOW

HIGHEST CASH PRICES PAID  
PROMPT RETURNS—HONEST  
WEIGHT  
WRITE FOR PRICE LIST AND  
SHIPPING TAGS

Hibbard-Stewart Co Inc. Seattle  
Please Mention This Paper

#### SHEEP FOR SALE

Shropshire and Oxford rams. 150 head of Shropshire rams, 30 head of Oxford rams, from the best of imported blood and show rams. Order now and be sure of rams at breeding time.

EARL WOOD  
Silverton, Oregon

#### FARM PROPERTIES

Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. DANIEL MCGREGOR, Berlin Bldg., Tacoma, Wash. Established over 30 years.

WANTED—To hear from owner of good ranch for sale. State cash price and description.

D. F. BUSH, Minneapolis, Minn.





of which were in milk. These 363 cows produced 226,929 lbs. of milk, with an average test of 4.22 per cent or 10,025.2 lbs. of butterfat. The averages of production, feed cost and profit are as follows, the profits being figured on the basis of 35 cents for butterfat and 20 cents per 100 lbs. of skim milk:

625 lbs. milk, 4.42 per cent fat, 27.6 lbs. butterfat; \$2.64 cost of roughage, \$0.84 cost of grain, \$3.48 total cost of feed; \$10.91 value of fat and

skim milk; \$7.43 profit. .126 feed cost for one lb. of fat. .557 feed cost for 100 lbs. of milk. \$3.14 returns for each dollar expended for feed.

These figures are the averages for all the cows in the association during the month of August.

Following are two tables showing the performance records of the four highest producing herds of the month and four of the least efficient producers:

|                        | Milk. Butterfat. |      | Feed Cost. Butterfat. |          | Profit. |
|------------------------|------------------|------|-----------------------|----------|---------|
|                        | Av.              | Av.  | Av.                   | Av. Cost | Av.     |
| Herd A .....           | 885              | 49.2 | \$4.08                | \$0.083  |         |
| Herd B .....           | 929              | 47.4 | 5.82                  | .123     |         |
| Herd C .....           | 733              | 34.2 | 3.43                  | .100     |         |
| Herd D .....           | 697              | 33.4 | 3.98                  | .119     |         |
| Average of 4 herds ... | 811              | 41.1 | \$4.33                | \$0.106  | \$11.68 |
| Herd W .....           | 220              | 16.3 | 2.93                  | .18      |         |
| Herd X .....           | 298              | 10.5 | 2.00                  | .190     |         |
| Herd Y .....           | 353              | 17.1 | 2.00                  | .117     |         |
| Herd Z .....           | 347              | 19.3 | 2.00                  | .104     |         |
| Average of 4 herds ... | 305              | 15.8 | \$2.23                | \$0.148  | \$ 3.91 |

As can be seen by the figures, altho the feed cost per month in the second group is only about half that in group one, still the cost of pro-

ducing a pound of butterfat is over 4 cents a pound higher and the average profit per month is \$7.77 less.

R. W. McKENNA,  
Tester.

## BUTTER AND CHEESE.

### At Washington State Fair.

The cheese exhibit at the Washington State Fair in 1916 was superb in quality. The judges and superintendents were all enthusiastic over the showing made and predicted that Washington will soon become noted for both quality and quantity of her cheese product.

The first prize for butter went to the Cascade Creamery, North Yakima, and the first prize for cheese went to Satsop Co-operative Cheese Company. Following are the scores:

### CREAMERY BUTTER

Division R, Class 2, Lot 1—All butter of the Washington Buttermakers & Creamery Operators' Association went in with State Fair exhibition scoring.

|                                                        |                   |     |
|--------------------------------------------------------|-------------------|-----|
| Cascade Creamery, North Yakima                         | first prize ..... | 95½ |
| Sorensen Creamery, Lynden .....                        | 95                |     |
| Turner & Pease, Seattle .....                          | 95                |     |
| Hazelwood Dairy Company, Spokane .....                 | 95                |     |
| Winlock Co-operative Creamery, Winlock .....           | 94¾               |     |
| Mason County Fruit Growers' Association, Shelton ..... | 94¼               |     |
| Olympia Dairy Products Company, Olympia .....          | 93¼               |     |
| Lewis County Co-operative Creamery, Chehalis .....     | 93                |     |
| Albert Jensen (Laurel Creamery), Bellingham .....      | 92¼               |     |
| Blaine Creamery Co., Blaine .....                      | 92                |     |
| G. B. Bales, Ellensburg .....                          | 92                |     |
| Prosser Co-operative Creamery Company, Prosser .....   | 91½               |     |
| George Van Kleffens, Washington Harbor .....           | 91½               |     |
| Commercial Creamery Company, Spokane .....             | 91½               |     |
| Old Dominion Creamery, Colville .....                  | 91½               |     |
| G. W. Schrine, Ellensburg .....                        | 91½               |     |
| B. B. Corliss, Seattle .....                           | 90                |     |
| Skamokawa Creamery Company, Skamokawa .....            | 90                |     |
| Capital City Creamery Company, Olympia .....           | 90                |     |

### DAIRY BUTTER

Division R, Class 2, Lot 1—

Mrs. R. R. Peden, North Yakima, first prize .....94½

Mrs. Henry Sander, Selah, second.

### UNSALTED BUTTER

Division R, Class 3, Lot 3—  
Cascade Creamery, North Yakima, first prize .....96  
G. B. Bales, Ellensburg .....95½  
Mrs. R. R. Peden, North Yakima.94  
ORNAMENTAL DAIRY BUTTER  
Division R, Class 3, Lot 2—  
Mrs. G. B. Thornton, North Yakima, first prize.  
Mrs. R. R. Peden, North Yakima, second prize.

### CHEESE

Division R, Class 4, Lot 1—  
Satsop Co-operative Cheese Company, Satsop, first prize .....96  
Battle Ground Co-operative Dairy Association, Battle Ground ....95½  
Frank Moulton, Lyman .....95¼  
The following were additional exhibits:  
Sager's Washington cream cheese, flavored, Ellensburg, first prize.  
American brick, Menlo Creamery, Menlo.

## BREEDERS' EXPERIENCE.

### I. J. Mathews.

My experience with Holstein cattle bears me out in the belief that some knowledge about the animals must be bought and paid for by experience. Starting with a few animals reduces the experience cost, says Mr. Mathews in Holstein Friesian Bulletin.

Words cannot express the joy that comes with breeding a fine heifer or bull and seeing it develop under the hand of the breeder. There is an intangible something about it—a love, as it were, a care that comes with watching the development of the tiny creature that comes to make its home with you. There is some pride, to be sure, to be gained from the fact that you have purchased an extremely fine animal, but there is infinitely more in knowing that you have produced one that passes muster when the judge walks down the line and ties the blue ribbon on the winning individual.

# AYRSHIRES

Premier breeder and exhibitor, Panama-Pacific Exposition. This herd holds six world's records for production. We offer you stock which will make you a profit where others fail.

For particulars write

J. W. CLISE, Redmond, Wash.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

### PACIFIC COLD STORAGE CO.

N. P. Wharf, Tacoma, Wash.

## HIGH QUALITY FEEDS

Shorts, middlings, bran. Dairy men should get our prices now per ton or car lots. We also manufacture Hen and Chick Foods. All cereals.

### Keystone Cereal Company

2311-17 Jefferson Ave.,

Tacoma, Wash.

### WAIKIKI FARM—A. J. C. C. JERSEYS

FOR SALE—Young bull now ready for service. Solid color, black tongue and switch. His sire is Fairy Glen's Majesty, whose dam is in R. of M. with 13,506 lbs. milk, 830 lbs. butter. Dam, Jenny Stephanie. She has a R. of M. Class AA test of 6880 lbs. milk, 469 lbs. butter as a four-year-old. This youngster is a good individual and should sire producers. We also offer several bull calves of excellent breeding. Write for pedigrees and prices.

Ira P. Whitney, Mgr., Route 7, Spokane, Washington

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

### TURNER & PEASE CO., Seattle, Wash.

Please Mention Horticulturist & Dairyman

## CATALOG AND GUIDE BOOK ON ORNAMENTAL PLANTING FREE

Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,

J. B. PILKINGTON, Nurseryman  
Portland, Ore.

# Grass and Grain Seeds

Farmers are planting heavily this fall. The demand is for the high quality that will give satisfaction. Our tests and the many testimonials are proof that we are supplying this want. We advise booking your orders as early as possible. Prices on proposed orders made on application.

## Aabling, Boyce Seed Co.

89 PIKE ST., SEATTLE, WASH.

## Vetch = Wheat = Oats = Rye

A COMPLETE LINE OF

SEEDS FOR FALL SOWING

THE BEST QUALITY, LARGE QUANTITY

## Tacoma Implement Company

1521 PACIFIC AVENUE

TACOMA, WASH.

## WALNUTS ARE DOLLARS

They are now selling for the highest price ever known, and have tripled in value in sixteen years. Our twelve-acre grafted Vrooman Franquette orchard bore, at six years, 1200 lbs.; at seven years, 3150 lbs.; and we estimate the crop this season, the eighth, at twice that of last year. These nuts sold for an average of 24c per pound; 25 times as much as potatoes at \$1.00 per cwt., 50 times as much as clover hay at \$10.00 per ton, and more apiece than average apples weighing fifteen times as much.

If you are from Missouri, come and see the nuts on the trees now before harvest. We will be glad to show you.

We have trees for sale grown from scions cut from this orchard. Order your trees early, as our supply did not equal the demand last year, and many were disappointed who ordered late.

Write for prices and booklet on walnut culture.

GRONER & McCLURE

HILLSBORO

OREGON



**The Foundation Herd.**

The animals should be selected according to the established rules. Prefer utility, but do not sacrifice it to beauty. I aim to get utility and beauty, both in extraordinary degree. There is a tendency now on foot among breeders to discount that beauty of form that adds so much to the pleasing appearance of the dairy cow. Let the young breeder beware of following this practice too far. True, some cows with all the fine physical qualities of the dairy animal have stood at the head of the class when showing and have exchanged places with the lowest individual in the class when it came to doing work at the pail. Accidents will happen, and because this one happens now and then is no sign that it is universal.

It has been shown that beauty and utility are possible in the same individual and a double standard, one for beauty and one for utility, should not be tolerated. Insist upon having both in the foundation cows, if possible, for it will be pretty hard to get comely calves out of poor stock. Insist upon utility also, for this adds so much to the value of the calves to be born. As a general proposition, it is better to care for one cow and get \$40 of profit, rather than 40 cows for the same profit.

It seems wise to advise the beginner to purchase his foundation stock of some reputable breeder.

Foundation stock ought always to be free from contagious abortion and tuberculosis. The cattle should always be tested by a competent veterinarian and his fees should be paid by the owner. I buy subject to the test, and if one reacts, I would not care to risk taking it. One must beware of contagious abortion. After you have looked over prospective cattle, go to the nearby neighbors who have cattle. Make some inquiries about the stock of Mr. So-and-So; it is sometimes surprising how much better posted the neighbors will be about the presence of the disease than the owner himself. I do not feel it to be underhanded to ask one's neighbors about cattle. There are firms which make it a business to rate commercial concerns. If a manufacturer wishes to know the rating of the man with whom he does business, he asks Dun's or Bradstreet's. A matter so vital as that of buying foundation cattle is not to be passed upon with only a single say-so.

My ideals of selling stock seem a little out of the ordinary. It is commonly accepted for the farm business to go under a single name. It seems to me that the wife usually contributes as much in the partnership as does the husband, and it is only fair that she be a part of the farm. Our stationery signifies a partnership and the partner is my wife. I believe she has some interest in the stock that is raised; she knows the lines of good Holstein breeding, and often knows the value of stock better than I do.

Bulls are always the first stock to be disposed of and it is often much better to sell them as calves, with no attempt to get fancy prices, rather than keep them along trying to get more money. When bulls are as plentiful as they are now, only the better calves should be saved. Use the knife occasionally; it makes good advertising. If the foundation cows are of the right caliber, it will not take

much hustling to dispose of good bull calves. Always see to it that stock for sale is "sound and right," and that prospective buyers are treated by way of the Golden Rule.

**GOOD YOUNG JERSEYS.**

Two Jersey heifers, owned by Pickard Bros., Marion, Oregon, completed a year's test with records of 750 and 800 lbs. butter respectively. Both are daughters of Golden Glow's Chief. They have good frames, deep bodies and would appeal to any progressive dairy cattle breeder.

**RECORD COWS BUSY.**

Lilly of Willowmoor, the famous Ayrshire cow owned by Mr. J. W. Clise, was on exhibit at the Seattle Land Show, and as her companion there was Lutsche Vale Cornucopia, the noted Holstein cow owned by Wm. Bishop.

Lilly of Willowmoor has a world's five year record of 84,891 lbs. milk and 4,202.4 lbs. butter, and Lutsche holds the world's record for one year of 31,246 lbs. milk and 998.7 lbs. butter.

On arrival for the show these cows were given every needed care and attention. Their mangers had been bedded with clean straw and it took a few minutes before the bales of alfalfa hay were available. Demonstrating that the business of a good dairy cow is to keep her digestive organs at work, these cows were determined not to wait, nor suspend for a single minute. The best of the clean straw served the purpose, and their jaws were set in motion as soon as they touched the stables.

**THE HOLLYWOOD SALE.**

The catalog for the first annual surplus sale of Registered Holsteins of the Hollywood Farm is being distributed. The sale takes place on October 21st, and there are 70 head of cattle, all bred and raised on this farm. In the herd are 150 milking cows and the surplus rapidly accumulating, will be sold at auction.

While the foundation herd are high class producers and not for sale, the stock offered have the breeding that has made Hollywood famous.

The catalog gives full description and pedigree of each animal to be offered and buyers can familiarize themselves by sending for a copy.

The stock is guaranteed as to health and general good condition.

A trip to this completely equipped farm is worth while for many of the dairymen among our readers who are striving to improve the conditions surrounding their dairying operations. This sale is most likely to be attended by a large number interested in dairying.

**FEED FOR COWS.**

Feed is the important item for dairymen to consider from now on until pasture is abundant in the spring. A good dairy farmer will keep his cows at work digesting to their full capacity; at the same time he will avoid waste by feeding too much of any particular kind of feed which may not be necessary to secure the highest measure of production.

The cow when properly reared and fed is a cheaper producer of human

**Puget Sound Herd Holsteins**

Production as well as individuality

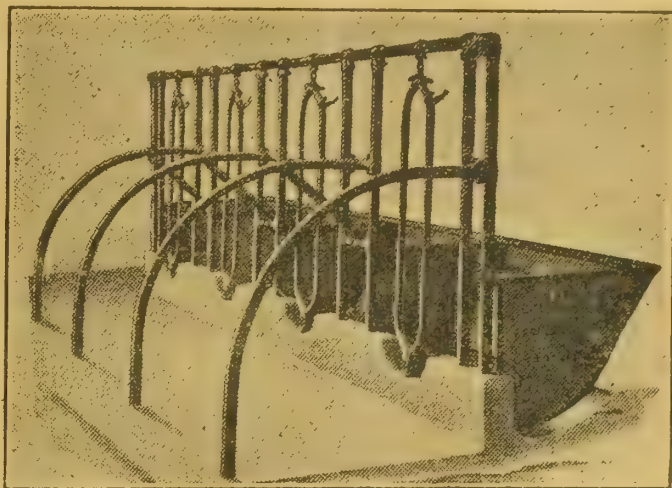
Home of the world's record milk cow

The first 17 head to finish their yearly records, which include six 2-year-olds, three 3-year-olds and eight cows, average for the lot 20,223 lbs. milk and 828 lbs. butter. Five of the lot average 1020 lbs. butter and 25,340 lbs. milk for a year. The dams of our three herd bulls average 26,247 lbs. milk and 1020 lbs. butter a year.

Stock for sale. Young bulls whose dams and sire's dams have large yearly records.

WM. BISHOP,

Chimacum, Washington

**Sanitary Barn and Dairy Equipment**

The Loudon Spring Balance Galvanized Manger is convenient and most durable. The upper part which is made of heavy galvanized sheet steel is made to fit a concrete bottom. The divisions which convert the manger into compartments, or individual mangers, are reinforced by Spot Welded Steel Strips all around the edges. The back or front (whichever it may be called) is attached to the divisions by angle irons bolted thereto. In putting the manger together no punching or drilling of holes or riveting is required.

To assist in raising the manger and to hold it in elevated position for cleaning, heavy Special Coil Wire Springs are used. Two different sizes of springs are used for lighter and heavier mangers, which are made of the best spring steel wire that can be procured. Each spring has a working strength of from 400 to 600 pounds, according to size and adjustment, and after the mangers are raised one-half way up, they will be held by the springs in a perfect balance at any point and without any additional assistance whatever.

The attachment of the spring is such that when the mangers are down in feeding position, the springs will help to hold them more securely in lowered position and to keep the cow from nosing them out of place. The upper ends of the springs are usually connected to the stall partitions by clamping holders similar to our standard stanchion holders which may be readily and easily adjusted back or forth thereon to increase or diminish the tension of the springs. With the two sizes of springs and the complete and convenient adjustments, any size or weight of manger may be balanced to perfection.

The mangers when raised stand 8 to 10 inches higher than any others in the market, and there is ample room for the heads of the cows when the manger is raised. They are so rigid that a section of four to six can be raised or lowered at one end—something that cannot be done with any other manger without twisting it all out of shape.

Complete line of Creamery and Dairy Supplies and Dairy Equipment. Write for catalog.

**Northwest Creamery Supply Co.**

306 Second Ave. So., SEATTLE, WASH.

food than either the steer, sheep or hog.

The nutrients needed by the cow are divided for convenience into four groups of compounds known as (1) proteins, (2) carbohydrates, (3) fats and oils, and (4) mineral matter or ash. All of these may or may not be found in our feeding stuffs, although they are very essential to the proper development of the animal and the performance of its functions.

**Protein.**

This element is represented in the clovers, peas, vetch and alfalfa, also

in bran, all of which are available to the dairymen in the Pacific Northwest at reasonable prices, based either on the cost of production or at the markets where sold.

Here the protein feeds are naturally more abundant than are the other elements. They furnish not only the nitrogenous compounds but also casein, albumen in the milk and build the muscles, connective tissue and furnish material for horn, beef and hair.

**Carbohydrates.**—Common examples of these compounds in pure form are starch and sugar. They furnish some of the energy, heat and fat in the



body; and also the fat and sugar of the milk. Carbohydrates are just as essential in the ration as protein and again we find them present in practically all of our feeds in varying amounts.

**Fats and Oils.**—These compounds are easily recognized in the animal body. They exist in practically all feeds in greater or less proportions. When taken as food, or in the feed, they produce energy, heat and fat as do carbohydrates except that the former are two and one-fourth as efficient as the carbohydrates: i. e., one pound of fats or oils will do as much work in furnishing heat, energy and fat as two and one-fourth pounds of carbohydrates. Some cows lay on fat when fed an excessive amount of feeds high in oil content in a ration, while others allow it to pass through the system practically untouched so far as digestion and assimilation are concerned.

**Mineral.**—Common salt, lime and phosphorus are also needed and should be supplied abundantly. The salt is easily obtained, phosphorus is afforded in cottonseed meal or linseed meal, and lime is obtained in alfalfa, clover or vetch, and it is essential that these crops should come from soils that have all the lime they will take up.

#### The Balanced Ration.

Various authorities have worked out definite feeding standards for cows, and the one most used by the feeders in this country is that of Professor Haecker, of Minnesota. His standard for a thousand-pound cow giving 25 pounds of 4 per cent milk daily is as follows:

For maintenance, 0.7 lb. protein; 7 lbs. carbohydrates; 0.1 lb. fat.

For 25 lbs. of milk, 1.18 lbs. protein; 5.75 lbs. carbohydrates; .45 lb. fat.

Total nutrients required, 1.88 lbs. protein; 12.75 lbs. carbohydrates; .55 lb. fat.

When the ration is such as to supply the different elements in the above proportions and at the same time providing for from 25 to 30 pounds of dry matter, it is said to be balanced and by calculation it will be found that the nutritive ratio is between 1 to 5 and 1 to 7.

#### Nutritive Ratio.

A table of digestible nutrients, given by Prof. A. B. Nystrom of the State College, tells us that 100 pounds of bran contain 12 pounds of digestible protein, 42 pounds of digestible carbohydrates, and 2.5 pounds of digestible fats. The first step in the calculation is to reduce the fat to terms of carbohydrates. This is done by multiplying the 2.5 pounds of fat by  $2\frac{1}{4}$  because each pound of fat contains as much energy as  $2\frac{1}{4}$  pounds of carbohydrates. This gives 5.625 pounds which now may be considered carbohydrates. This, added to the 42 pounds of digestible carbohydrates given in the table, makes a total of 47.625. We have 12 pounds of digestible protein to 47.625 pounds of digestible carbohydrates and by dividing 47.625 by 12 we find we have 3.96 pounds of carbohydrates to every pound of protein. Therefore, the N. R. of wheat bran is 1 to 3.96, usually written 1:3.96 or approximately 1:4.

In speaking of the nutritive ratios of different feeds they are frequently

referred to as being very wide, wide, medium, or narrow. The exact nutritive ratio for each of these groups is fixed arbitrarily, but usually a feed with a nutritive ratio of 1:12 and up is considered very wide; that from 1:8 to 1:11.9 wide; that from 1:5 to 1:7.9 medium, and that less than 1:5 narrow.

#### Roughage.

As a rule dairymen in the Pacific Northwest do not go far astray in their feed formulas, for the crops naturally grown here are rich in protein. The elements that occasionally need be bought are grains and oil meals, usually known as concentrates. But it is necessary that some of this fat producing element is provided or the cows will weaken after a time even if they do not show a decrease in milk and butter production for a while.

Alfalfa hay is one of the best roughage feeds, the nutritive ratio is about 1 to 4.

Clover will bring nearly as good returns pound for pound as alfalfa. The nutritive ratio is about the same.

Vetch is palatable alone, but makes a better balanced ration when grown with wheat when they should stand about 1 to 5.

Field peas are frequently grown with oats, barley, wheat or rye, and made into hay or into silage. Peas alone have a ratio of 1 to 4, and grown with grain about 1 to 5.

**Roots.**—Most roots contain 80 to 90 per cent of water, therefore not very nutritious. It would be necessary for a cow weighing about 1000 pounds giving 30 pounds 4 per cent milk daily to eat 270 pounds of mangels each day to get the required amount of nutrients. But in the absence of pasture or silage roots supply needed succulence. Dairymen who are feeding a heavy grain ration with their dry hay can make a big saving on their feed bill by substituting roots for a part of the grain ration. In some cases as much as half of the grain ration may be substituted. The results of experiments along this line show that one pound of dry matter in roots is equal to one pound of corn or other grain when fed to a dairy cow. And when these grains are worth \$30 per ton, root crops are considered economical at \$4 per ton as substitute for part of the grain ration.

#### Other Mixtures.

Potatoes are not profitable, as a rule, for cows, but if fed should be only in small quantities, as they are not so easily digested as roots.

Apples may also be fed for succulence though not of high nutritive value. Beet pulp may be fed in any amounts up to 50 pounds of the soaked pulp per day. It takes about 5 parts water to one of dried pulp. The nutritive ratio is about 1 to 12.

Corn, wheat, oats and barley are all used in the grain ration; the selection depending largely on cost of growing or market value. When possible it is well to feed a mixture of two or more of these grains, and it is economical to have them ground unless they are made into silage.

Bran and shorts are standards when available and when not too expensive should be included in the ration, as they have valuable laxative properties besides the protein contained.

Soy bean meal and linseed oil cake

## FREE to all owners of cows

### If you keep cows you ought to write for this book

**THIS** book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

**"How a Dairyman Made Good"**—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

**"Year Around Feeding of Dairy Cows"**—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

**"How to Judge a Dairy Cow."**—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

**"Building Up a Dairy Herd"**—a practical breeder gives some sound advice on this important subject.

**"The Farm that Won't Wear Out"**—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

**"The Care of Cream on the Farm"**—quality is as important as quantity. It costs little and brings big returns.

**"Silos and Silage"**—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

### The De Laval Separator Co., 165 Broadway, New York

Please mail me, postage free, a copy of your New Dairy Handbook. I keep \_\_\_\_\_ cows I sell cream, make butter, sell milk (cross out whichever you don't do). The make of my

Separator is \_\_\_\_\_, used \_\_\_\_\_ years

Name \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_ RFD \_\_\_\_\_  
177

may be fed in small amounts, but unnecessary where other feeds rich in protein are used.

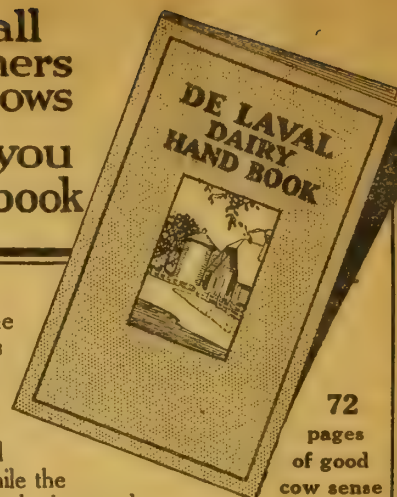
Alfalfa molasses meal has a high feed value, and is palatable. It is a good substitute for bran, barley and corn to a large extent. The nutritive value varies according to the amount of molasses added, but averages about 1 to 6.

"The cow needs a large amount of water to drink, but aside from this there is a demand for feeds containing a high percentage of water, such as green foliage, silage, roots, etc. The cow's digestion is kept in much better condition when such feeds are used, and she is able to get more out of the dry feeds by combining them with the succulence than she would be able to get from the dry feeds alone.

"The last, but not the least important requisite, is that the ration must be cheap. The dairyman cannot afford to buy expensive feeds simply because they furnish the most desirable nutrients, although in many cases the more expensive feeds when considered from the standpoint of the price per ton are really the most economical when the individual nutrients are considered."

#### IMPROVING COWS.

Make every individual cow measure



### She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club  
370 West 23rd Street - New York City

up to the scales and the Babcock test is the advice of Geo. P. Grout, an experienced dairyman an official judge of dairy stock. Friendly rivalry between breeders of different kinds of dairy stock is an excellent incentive to raise standards, but remember it should be friendly, for the fact that a cow holds a phenomenal record only proves that she is good



individually. Don't try to pick out the best breeds, but select to your liking; then spend all possible time and effort in developing the best possible individuals from your herd.

"One of the best ways of doing this is to buy a pure-bred sire. You cannot get one that is too good. He will increase the production of your herd rapidly and cheaply, no matter what his cost. For the man who does not feel that he can afford to buy a herd of pure-bred cows, this is the best and most effective procedure.

"Make a study of feeding and caring for the animals. A herd will not develop itself. It takes study, persistence, brains and ingenuity—and not a little experimenting. And the dairyman must choose carefully the sire for his herd, and the cows he keeps for milkers. The records and pedigrees must, of course, be given the proper attention."

The heart girth,—the depth from a point on the back just behind the shoulder to a point just behind the front leg,—is one of the most important points. This indicates constitution, and the heart girth cannot be too long, according to Mr. Grout. Some of the physical details that determine a good dairy cow are: a straight back line, from the shoulder to the tail; well chiseled shoulders with a thin, graceful neck; well defined milk veins running to the udder—the more branches that can be seen running from the main vein the more milk the cow is liable to give; low hollow space from the hip bone to the last rib; rounded, wide-spread ribs, a large well formed udder, extending well back—the bottom of the udder should be level, that is, the front teats should not be farther from the ground than the rear ones. The branches from the milk vein enter the abdomen along the sides. Where they enter the abdomen a slight depression may be felt. If these are well defined, the cow is pretty certain to be a valuable one—and she will have the other physical points also.

#### THE TODD HERD.

The increase in the Todd & Sons herd of Holsteins at North Yakima during the past year has been normal. They have on hand a few young bulls of very choice breeding, which would be worth to the ordinary dairy farmer far more than the selling price. Their heifers and

young cows are keeping up to anticipated standards and several are sure to command handsome prices.

Their new herd bull, Sir Korndyke Ormsby Piebe, is a close relative on both his sire and dams' sides to the world's record milk and butter cow, Queen Piebe Mercedes, which produced, at 4 years old, in 365 days, 30,145.4 lbs. milk and 1,403.8 lbs. butter. The sire of this world's record cow is also the sire of Queen Piebe Ormsby Mercedes, the dam of which is the dam of Mr. Todd's bull. He was purchased from Mr. Schroeder and is strong in type which makes outstanding dairy records. The Todds are skillful breeders and dairy-men are looking for grand results.

#### EXPERIENCE WITH GUERNSEYS.

Guernsey breeders claim a record of 1200 mature cows officially tested, which produce each over 10,000 lbs. milk containing 500 lbs. butter fat in their annual production. This is a high per cent compared with number of cows in the breed.

The Guernsey bull, with good records, produces improved grades wherever used. On this point Mr. William Newlin gives some valuable experience. Twelve grade Guernseys were selected from a dairy herd at a cost delivered of \$200 each, on borrowed money. These 12 cows paid for themselves the first 12 months, because of two years following they paid for themselves again, besides raising 6 heifer calves. At the beginning of the fourth year there were 32 females on the farm, and the sides producing 7 heifer calves. In owners found it very profitable to keep on grading up with Guernseys by having a good Guernsey pure-bred bull at the head of the herd. The cream, milk and butter always sell at the highest market price because of its rich yellow color and well-balanced composition. One of the great problems of dairying today is to improve the yield and production of the ordinary cow as found in the majority of dairies. If a Guernsey bull is selected the dairyman should stay with that breed.

#### DAIRYMEN ADVERTISE.

To increase the production and consumption of milk, butter, butter-milk, cheese and ice cream, a fund of \$50,000 has been subscribed, and it is proposed to raise this sum to \$150,000 to cover a complete cam-

paign of three years by the National Dairy Council, 130 North 5th Ave., Peoples Life Bldg., Chicago, Ill.

The godfathers of this extensive, powerful and beneficial project are enthusiastic in their belief that this step means the full realization of the object of the National Dairy Council, now counting 280,000 members, "to advance the cause of dairying in America by promoting the dairy cow and all interests dependent upon her, through co-operative and united effort."

All now depends upon the support given the execution of this plan by the individual members of the industry. And the broad-gauged underwriters to the preliminary fund are confident that their enterprise and liberality in financing the opening campaign will electrify producer, manufacturer, distributor and consumer alike and that the big fund of \$750,000 will be promptly subscribed.

It is believed that the wonderful results obtained through co-operation in the Orange and Raisin Industries, in the Lumber and Cement Industries and others will be equaled and surpassed; that the American Cow and all dependent upon her, will at last come into her own, and that the Dairy Industry will quickly be placed in the very front rank of modernized, closely organized and highly efficient institutions.

The cow, the milk-producer, the butter-maker, the cheese-maker, the ice-cream manufacturer, the distributor will now have a sponsor armed to the teeth to combat inimical interests, stop misrepresentation, spread information and education and heighten the standard, the prestige and profit of the industry at large.

And the great American people and public will be benefited in its health and its pocketbook.

Over and beyond all that, the success of the campaign must solve the Nation's most troubling agricultural problem—the fertility of its soil, and ward off the impending danger of its loss of standing among the nations of the world as the standard bearer of Agriculture.

Battles are won not by wishbone, but by backbone—with men, money and machinery, and the Dairy Industry is to be congratulated upon the acquisition of a fighting machine to thwart its foes and secure its rightful place in the Sun.

What is your contribution to the War Chest?

#### TESTING COAST COWS.

In Washington 13 Associations Testing Over 6800 Cows.

Experience has demonstrated the impossibility of distinguishing between profitable and unprofitable cows except by the continued use of the scales and Babcock test.

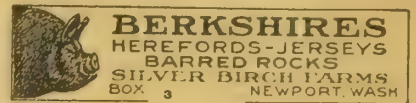
In order that records may be kept most economically and conveniently the Extension Department of the State College of Washington has been giving assistance wherever the demand has arisen, in the organizing of farmers' co-operative cow testing associations.

Herd Record Books are furnished each member and a record is kept by the man employed to do the testing, of the product of each cow in the herd, together with the cost of pro-

#### HILLCREST FARM GUERNSEYS

Herd gull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat; his five closest female kin have A. R. records that average 625 lbs. fat. At present offer one yearling bull reasonably priced. Also 17 grade Guernsey heifers.

C. G. HENKEL, Opportunity, Wash.



#### Holstens for Sale

A carload of well-bred, high-grade Holstein heifers, also 20 steers. For further particulars and prices address

H. S. ROYCE  
Eatonville, Wash.

duction. The tester visits each member's farm one day in each month, records each cow's production in terms of milk and butter-fat, charges her up with the amounts of feed she has been receiving and makes a record of the profit or loss each cow returns.

It is both practical and desirable that dairymen weigh each cow's milk, night and morning, continuously, but on the vast majority of farms this practice is deemed a burden. The association records taken for one day in each thirty do not give quite the accuracy in results which could be obtained by weighing the milk each day. However, in comparing yearly milk and butter-fat records made upon the same cows at the same time, they are found to correspond very favorably.

Operating in this manner it is possible for one association to accommodate between twenty and thirty farmers having a total of from five to six hundred cows. The cost of keeping these records is \$1.50 per cow per year. This money paid in to the association covers the cost of operating.

During the past year assistance has been given in organizing 13 cow testing associations in Washington. Over 6800 cows are being tested in these associations.—O. E. Gibson, Dairy Field Agent, Extension Service and U. S. D. A.

#### FOREIGN MARKETING.

##### Dairy Products Export Large.

American dairymen occupied a strong position in the foreign trade of the year just ended. Their sales to foreign countries were by far larger than ever before, while imports of competing products fell to the lowest point touched in the last six years. The aggregate value of our exports of butter, cheese, milk and cream in the fiscal year 1916, according to the Bureau of Foreign and Domestic Commerce, Department of Commerce, was 24 million dollars, being 10 million more than in 1915, and 21 million more than in 1911 or 1913. On the other hand, imports of that group in 1916 amounted in value to slightly less than 10 million dollars, as against 14½ million in 1915, 10¼ million in 1913, and 10 million in 1911.

Export sales of condensed milk during the fiscal year ended June 30, 1916, rose to the stupendous total of 156 million pounds, valued at 12½



Mr. William Todd and his Holstein cow, Cascade Ruth, which gave 400.6 lbs. milk and 20.05 lbs. butter in 7 days at 2 years of age; when mature is becoming one of the leaders in production on the Coast.



million dollars, thus eclipsing the record of 37 million pounds for 1915, and the annual average of 16 million pounds for 1910-1914. The total exports of cream and milk, fresh or condensed, amounted to 13 million dollars during the year, being five times the value of imports of that character, while in 1911, five years earlier, imports valued at 2 million dollars, were double the value of exports.

Cheese of American manufacture was also exported in unusual quantities, the total of 44 million pounds for 1916 being exceeded in recent years only by the larger aggregate of 55 million for 1915 and closely approximating the annual exports of from 50 to 80 million pounds, which

ruled some 25 years ago. Imports of foreign cheese tend steadily downward, 30 million pounds having come in during 1916, against 50 million in 1915, 49 million in 1913, and 46 million in 1911.

The year's exports of butter amounted to 13½ million pounds, against 10 million in 1915, being twice as much as in any other year since 1907. In 1906 the total temporarily rose to 27 million pounds.

According to C. J. Brand, Chief Office of Markets and Rural Organization, the amount of butter in cold storage on August 1, 1916, is 4 per cent greater than a year ago, while the holdings of eggs is 24 per cent less.

## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. C. A. JOHNSON

### HOOR BY HOOR.

From the shadow to the substance,  
From the darkness to the light,  
You and I are showily wending  
Hour by hour.

Loving deeply, bearing bravely;  
Turning from the god of greed  
You and I are walking heavenward  
Hour by hour.

Loving nations, aiding brothers,  
Seeking ever greater truths,  
You and I attune our beings to the  
infinite  
Hour by hour.

—Wilton E. Cross.

### PERSEVERANCE.

The world is occupied with men  
Who fall, but quickly rise again,  
But those who whine because they're  
hit  
And step aside to sulk a bit  
Are doomed some day to wake and  
find  
The world has left them far behind.

—Detroit Free Press.

A man has no more religion than  
he acts out in his life.—Henry Ward  
Beecher.

### THRIFT.

Without me no man has ever  
achieved success, nor has any nation  
ever become great.

I have been the bed rock of every  
successful career, and the cornerstone  
of every fortune.

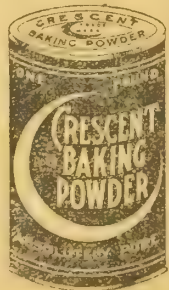
All the world knows me and most  
of the world heeds my warning.

**Wholesome? Yes!**

That's why food experts  
and good cooks use

**CRESCENT  
BAKING POWDER**

**All Grocers  
25¢ per Lb.**



### PREPARATION FOR LAWNS.

The first consideration in making a new lawn is a suitable soil. This should be well drained and of good texture and should be thoroughly prepared. A good loam will need only enrichment. This may be brought about best by a dressing of well-rotted barnyard manure thoroughly worked in. If manure is not available, 20 pounds of bone meal for each 1,000 square feet may be substituted. If the lawn site is of stiff clay both sand and humus, or decayed vegetable matter, must be worked in if a good turf is to be secured. There is little danger of using too much of either of these materials. Light, sandy soils should have clay and humus worked in to increase their water-holding capacity. The humus may be supplied in the form of manure compost or soil from mushroom beds at the rate of one-half ton to 1,000 square feet of area. After the proper constituents are supplied, the lawn soil should be thoroughly stirred and firmed. This preparation should begin several weeks before seeding time to allow sufficient time for the ground to

## TEST OF 21 YEARS

The Northwest Grocery Company has been and is doing a strictly cash business with 10,000 satisfied customers. Why not you? Your mail order will receive the same careful attention as though you came in person.

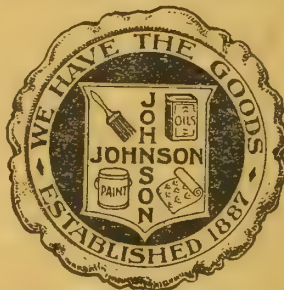
### OUR CATALOG

Gives you lowest prices on reliable Groceries. We pack and deliver to the freight depot free. Send postal today for our catalog and further information. Please mention this paper.

**Northwest Grocery Co.**

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TACOMA WASH.

## A. S. Johnson & Co.



1142 C Street Tacoma, Wash.

**STUDY TELEGRAPHY, STENOGRAPHY, Bookkeeping, Law, English.** Board and tuition may be earned. Catalogue free. Mackay Business College, 909 Main, Los Angeles.



Buy the Gasoline  
Lanterns, Lamps,  
Mantels and repairs  
you require early.  
Send for descriptive  
circular at once to

**BEN OLSON CO.,**  
1330 Commerce St.,  
Tacoma, Wash.

## HARDWARE

Complete lines for needs of farmers.  
High quality, prompt service, right  
price.

Roofing Paper  
Write us your needs.

**HENRY MOHR HARDWARE CO.**  
1141 Broadway, Tacoma, Wash.



## Indoor Closet

**More Comfortable,  
Healthful, Convenient**

Eliminates the out-door  
privy, open vault and cess-  
pool, which are breeding  
places for germs. Have a  
warm, sanitary, odorless  
toilet right in your house.  
No going out in cold weather.  
A boon to invalids. Endorsed  
by State Boards of Health.

### ABSOLUTELY ODORLESS

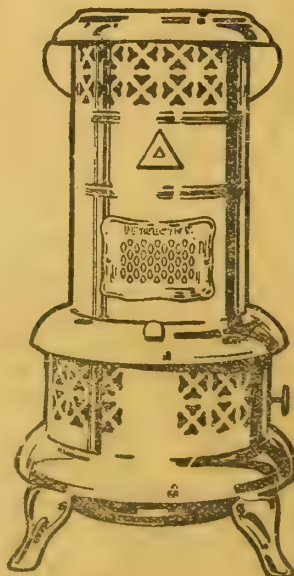
Put It Anywhere In The House  
The germs are killed by a chemical process in  
water in the container, which you empty once a  
month. Absolutely no odor. No more trouble  
to empty than ashes. Closet absolutely guaran-  
teed. Write for full description and price.  
**ROWE SANITARY MFG CO.** **ROWE BROS., DETROIT,**  
Ask about the Ro-San Washstand—Hot and Cold  
Running Water Without Plumbing **MICH.**



## Winter is coming

Cold, rainy days—then  
you'll appreciate the  
cosy, cheery warmth  
of a good oil heater.

Can be carried easily and  
safely from room to room.  
One gallon of *Pearl Oil*  
gives 9 hours of steady,  
odorless, clean heat.



## Perfection Oil Heater

Dealers Everywhere

**STANDARD OIL COMPANY**  
(California)

settle and for weed seeds to ger-  
minate.

### CANDIED CRANBERRIES.

For 1½ cups of berries, make a  
thin sirup by boiling together until

clear 2 cups of sugar and 2½ cups  
of water. When the sirup is cool,  
add the berries and bring very slowly  
to the boiling point. If the berries  
are heated too quickly, the skins will  
burst before the sirup soaks into the



pulp, says Office of Information, U. S. Department of Agriculture. As soon as the sirup boils, take the dish off the stove and let it stand over night. Next day, drain the sirup from the berries and boil it until it is reduced to about half its original volume. Put the berries into this medium-thick sirup and heat slowly; boil gently for 3 or 4 minutes, and then allow to stand for 2 hours or more. Then boil gently a third time for 5 minutes. A smaller dish probably will be needed for the third and last boiling. When thoroughly cold, or better still, on the following day, drain off the sirup and spread the berries out on a lightly buttered plate or a sheet of clean, waxed or lightly buttered paper until the surface of the berries dries.

## BOYS' AND GIRLS' CLUBS.

### The Call of the Country.

President E. O. Holland, of the State College of Washington, before the Boys' and Girls' Club Camp at Spokane, said, in part:

"Do not let the excitement of the moment, the music of the band, the street car, the automobile cause you to feel that the city is a more desirable and those of high degree have found me a helpful friend.

able place than the country. These things are all good enough for a time, but the call of the country is far greater; and I know you will wonder how I know this. I know it because boys and girls from Spokane, Portland, Seattle, Tacoma and other large cities are coming to college to prepare themselves to live in the country.

"A few years ago it was thought that any man could farm, even though he had failed in medicine, law, teaching or business, but farming today is just as much of a business as engineering, law, medicine, teaching or keeping a store and thousands of boys and girls are realizing this and preparing for the opportunities that await them.

"There is no line of business in the world offering greater freedom for individual work, whether as manager or laborer, than rural work. The hours are what you make them and while some parts of the work appear like drudgery, science is continually teaching us new things about agriculture and with the use of modern inventions the farmer is becoming the leader of men."

## LOGANBERRY JUICE.

Last year the Pheasant Fruit Juice Company, of Salem, Oregon, sold 40,000 gallons fruit juice. This year they set a mark for the sale of 400,000 gallons and at a late date indications are they will come very near that mark. Sixty men have been working for some time day and night and the business is expanding phenomenally. The firm does a large amount of advertising and their campaign is handled very successfully by the Deuty-Tyler Company, of Portland, Oregon.

## ROSES FOR LAWN AND BORDER.

There is a rose for every purpose, say flower specialists of the U. S. Department of Agriculture. Selection and breeding have been practiced with this best loved of all

flowers for ages, and have resulted in the development of a multitude of rose varieties, some of which are adapted to use under almost any conceivable conditions. By familiarizing himself before the planting seasons in fall and spring with the different types of roses and the purposes for which they are especially suited, the rose gardener in city or country may add greatly to the attractiveness of his home.

Roses for use on lawns and along borders must have habits of growth and foliage which fit them, particularly for mass effects. Foliage, in fact, is more to be desired under such conditions than fine flowers, since it is a feature during the whole growing season, while the flowers may cover a period less than a fortnight in length. When suitable sorts are chosen, roses are quite as appropriate and effective for use in relief planting about the ground line of buildings or in masses upon the lawn or along borders as other ornamental shrubs. For such use, however, they must be hardy and moderately free in growth, and must possess foliage reasonably disease-resistant and free from insect attack.

### Fertilizers.

The best fertilizer for roses is rotted cow manure, though any other well-rotted manure or good compost will serve the purpose. Fresh manure, especially horse manure, should be avoided, though if no other manure is available it may be used with extreme care. It must not come in direct contact with the roots when planting nor should any quantity of it be used immediately beneath the plant to cut off direct connection with the water supply. Of the commercial fertilizers, ground bone is excellent as additional food. It will not, however, answer as a substitute for an abundant supply of compost. Cottonseed meal, where it is cheap enough, may be used as a substitute for bone. Wood ashes are sometimes a helpful addition or, when they are not available, lime and muriate of potash may be used and should be applied separately. Rose growers having only sandy soils should make more frequent applications of manure than those dealing with the heavier soils, since the organic matter burns out more rapidly in a soil rich in sand.

### General Planting Methods for Roses.

Planting methods for border and lawn roses apply also to practically all other roses. Stock should be planted as soon as possible after it arrives. When it is impossible to plant immediately, the plants should be placed in a trench and the roots covered. If the plant roots are dry when received soaking them in water an hour or more before this heeling-in is done is desirable. If the stems are shriveled, plumpness may be restored and growth insured by burying the whole plant for a few days. If the plants are frozen when received they should be placed where they will thaw gradually and should not be unpacked until there is no question that the frost is out.

More plants are killed by undue exposure of roots at planting time than from any other cause. No matter how short the distance to the permanent planting location, plants



## Canadian Wheat to Feed the World

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

You can get a Homestead of 160 acres FREE and other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war.

The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

J. M. GRIEVE,  
Cor. 1st and Post Sts.,  
Spokane, Wash.  
Canadian Government Agent.



should be taken there with the roots thoroughly covered. The roots may be placed in a bucket of water while removing to the planting ground and until planting, or they may be puddled in a mixture of thin clay and then kept covered with wet burlap or other protection.

### SEED AND SEEDING.

Kentucky blue grass is, in general, the most desirable turf-forming grass for lawn use in the northern part of the United States. For best results it usually is made the predominant ingredient in mixtures containing also the seeds of several

other grasses and white clover. A mixture found satisfactory by department specialists consists of 17 parts of Kentucky blue grass, 4 parts re-cleaned redtop, 3 parts perennial rye grass, and 1 part white clover. Those planting lawns must not make the mistake of sowing their seed too thinly, for a thick stand of grass is essential at the beginning. From 4 to 5 pounds of the above mixture should be sown for each 1,000 square feet of area. The seed may be covered over a small area by hand raking, or, on a large area, by a weeder. After the seeds are covered, the planted area may be rolled lightly.

## STOCK

### MONEY IN SHEEP.

H. Hackedorn, Missouri Agricultural Experiment Station.

The breeding flock of sheep has been one of the best paying investments. Native or Western ewes crossed with a good mutton ram produce good marketable lambs, and with present prices of wool the fleece will more than pay the cost of keeping the ewes. Native ewes will be high in price.

The following is quoted from a reliable sheep commission house: "We believe breeding ewes will be in good demand throughout the season, as the good kinds only come at intervals. We believe it would be the best thing for anyone figuring on buying stock of this class to place their order at once, for we do not think they will get any cheaper any time this season than they are at present."

### HORSE BOARDERS.

One of the hard jobs on the average farm is keeping horses profitably employed throughout the year. It is necessary to have enough to do the work at the busy season, but very expensive to feed the horse that stands at the rack and "eats its head off" the rest of the year. In its study of the question, the Missouri Agricultural Experiment Station found one young farmer who kept his horses working and costs down to 6 7-10 cents an hour, per horse, as compared with 7 9-10 cents on the average farm. The horse which did the most work, worked nearly three

and a half times as many hours a year as the one which did the least, and nearly twice as many hours as another. The actual numbers of hours they worked were 1340, 1239, 1028, 702 and 391.

In these days of efficiency and economy it is highly important that every man should do everything possible to reduce the total number of horses it is necessary to keep and increase the ways of finding profitable employment for them. Of course, livestock is very necessary if the soil fertility is to be kept up, but aside from work animals the stock should be something that will produce meat, milk or eggs, in return for the feed it uses.—R. M. Green, Missouri Agricultural Experiment Station.

### FINISHING PERIOD.

At the close of the 16 weeks' growing period, 12 hogs were divided into different lots in order to have them as uniform as possible to start the finishing period of 28 days.

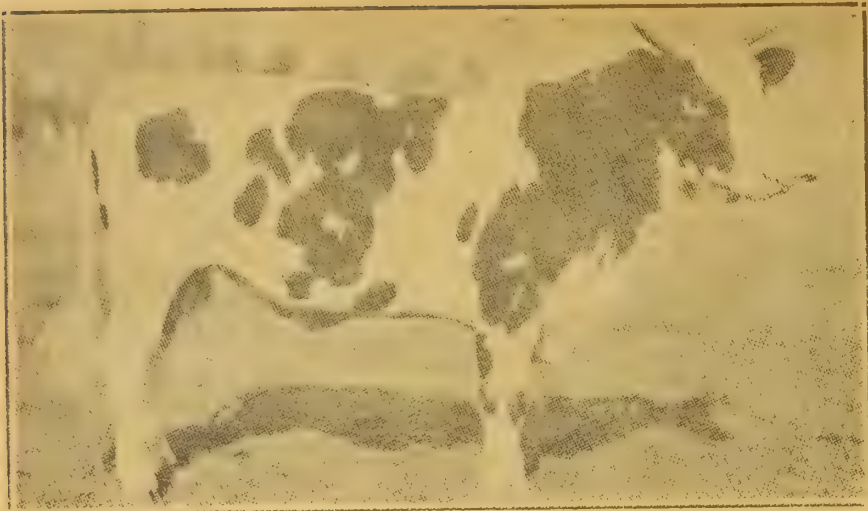
Lot 3 received 4 parts corn meal, 4 parts middlings, 1 part fish meal.

Lot 4 received 9 parts corn meal, 1 part fish meal.

Lot 5 received 9 parts corn meal, 1 part tankage.

The lot fed corn meal, middlings and fish meal during the finishing period did not consume as much feed as the lot fed corn and fish meal or the lot fed corn and tankage. The cost of producing 100 pounds gain in the lot fed corn meal, middlings and fish meal was 72 cents less than in the case of the lot fed corn meal





Holstein herd sire Chimacum Spring Farm Pontiac, which won Sweep-stake prizes in Skagit and Whatcom County fairs. Owned by A. E. Smith & Co., Sumas, Wash.

and tankage; both lots, however, were about equal with respect to the average gain per pig during this period. The lot fed 9 parts of corn meal and 1 part of fish meal made a better showing than either of the other lots in the rate of gain, pounds of feed fed per 100 pounds gain, and the cost or 100 pounds gain.

From this experiment the conclusion is justified that fish meal is a very effective supplement to a grain ration for pigs. Hogs relish it and are extremely fond of it, says the U. S. Department of Agriculture.

#### HOLSTEINS FROM SMITH HERD.

A. E. Smith & Co., of Sumas, Wash., will consign 10 mature cows to the Public Sale of Western Washington Holstein Breeders' Association, to be held at Mt. Vernon, November 15th. These cows nearly all have A. R. O. records and are bred to the prize herd sire Chimacum Spring Farm Pontiac. This bull won sweepstakes and first prizes at the Burlington and the Lynden fairs this

season, and 14 cows from this herd were also awarded leading prizes besides winning the 48-hour milk and butter test.

Six young heifers owned by Fryar and Smith will also be consigned to the sale. These have high records back on both sides.

Fryar and Smith sold 17 young bulls to parties in the Imperial Valley, California, recently. The demand for good breeding stock is very strong.

#### HOLSTEIN SALE, NOVEMBER.

The purebred Holsteins consigned to the Western Washington H. B. Association for their November sale at Mount Vernon are raised by members of the Association, well bred and carefully selected, as shown in the catalog. The names of members are Wm. Bishop, Chas. Eldredge, Thos. Yarr, P. S. Govan, J. H. Hulbert, Tualco Valley Farm, Herman Steffen, M. F. Swalwell, A. E. Smith, J. C. Burnam, Thos. Aldwell and B. S. Fryar, all reputable breeders, with herds of outstanding merit.

Sound is the largest, most abundant, and its fur most valuable, of any mole in North America. From now on

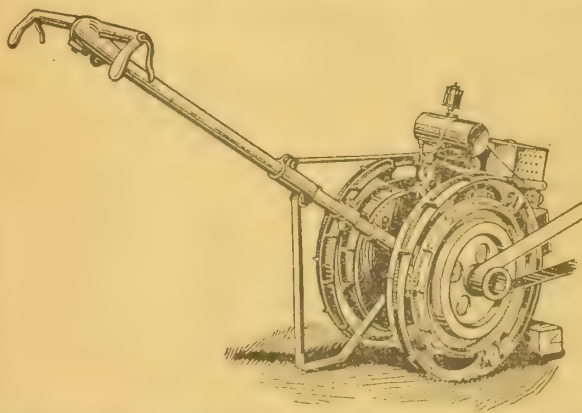
#### Strawberry Plants

Carefully selected plants for both commercial and domestic use. Varieties and price list furnished on request. Address,

A. R. Bagley  
Canby, - - - Oregon

GET ONE OF THESE

### Beeman 4 Horse Power Tractor and Walking ENGINE



The greatest labor saving device ever invented for the farm. Saves labor of hired man and horses. Will operate any belt driven machine. As handy as a man anywhere you want it. Costs no more than a stationary 4 horse Power Engine. write for complete Catalogue.

**Agricultural Engineering Co., Seattle**  
SOLE DISTRIBUTORS AGENTS WANTED

## FOURTH SEMI-ANNUAL SALE

# Western Washington Holstein Breeders Assn.

WILL BE HELD AT MT. VERNON WM.

## November 15, 1916

#### CONSIGNORS:

|                          |                     |
|--------------------------|---------------------|
| Wm. Bishop .....         | Chimacum, Wash.     |
| Chas. Eldredge .....     | Chimacum, Wash.     |
| Thos. Yarr .....         | Chimacum, Wash.     |
| P. S. Govan .....        | Sequim, Wash.       |
| J. H. Hulbert .....      | Mt. Vernon, Wash.   |
| Tualco Valley Farm ..... | Monroe, Wash.       |
| Herman Steffen .....     | Monroe, Wash.       |
| M. F. Swalwell .....     | Fall City, Wash.    |
| A. E. Smith .....        | Seattle, Wash.      |
| J. C. Burnam .....       | Snohomish, Wash.    |
| Thos. T. Aldwell .....   | Port Angeles, Wash. |
| B. S. Fryar .....        | Sumner, Wash.       |

Seventy-five Head of "The Best in the West" are catalogued for this Sale, including a number of large record young A. R. O. cows, and young bulls and Heifers from 30 lb. sires and large record dams

**W. B. Winters, Sec.-Treas.**

**1514 HEWITT AVE.  
EVERETT, WASH.**



#### HAMPSHIRE SWINE

Early maturing, good feeders, a profit-producing breed. Our show records include highest awards. Stock of the best quality. Youngsters, unrelated, for sale.

**GREEN GROVE STOCK FARM**  
J. M. Fruitts, Prop. Enterprise, Oregon

during the fall and winter season is a good time to do the trapping.

#### Trapping.

The evidence of a mole's activity in lawn, garden or field is presented in the ridges or the mounds of earth it constructs. The former show the direction and course of the animal's hunting paths, which are so close to the surface that the sod or the soil crust is upraised and, incidentally,

much damage is done to the roots of plants. The mounds indicate deeper tunneling; for they are formed of earth pushed up from lower levels, which the soil is too compact to admit of being simply crowded aside. Many of these deeper runs are highways of common traffic, used often by a number of moles and frequented also by shrews and



one or more species of field mice.

All types of mole trap in common use in America depend for their operation on the same sort of tripping device—a trigger pan designed to rest, when the trap is set, on an obstruction produced in the mole's runway. The trap is sprung when the mole follows its natural instinct to reopen the run by burrowing thru or upheaving the obstruction. No trap or part of a trap must be in or project into the runway itself, for the mole invariably burrows around anything thus introduced into its retreats. It is a waste of time to try catching moles with steel traps, rat traps, gopher traps, or like devices.

The catching and killing mechanism of mole traps are of three types—choker loops, gripping jaws, and impaling spikes, the last undesirable.

#### Setting the Traps.

The trap may be set either in one of the deeper highways of a burrow system or in a shallow hunting path. It is common practice, when setting in the latter situation, to place the trap from the surface by simply forcing the loops or the jaws down into the soil. This is a mistake; for, while the trap will sometimes work successfully when thus located, in the long run more catches will be made if one always digs into the runway and adapts the setting to known conditions. The break or opening into the burrow should be no larger than is necessary to accommodate the trap; otherwise there is chance of the mole's deviating from the original course and passing through without being caught. When setting on the deeper runs one must dig a little lower than the bottom of the tunnel in order to place the trap properly; for the tendency of a mole is to attempt passing under, rather than to one side, of a break or obstruction in its runway.

In the April Bulletin, Western Washington Experiment Station, Puyallup, Wash., is complete information on Trapping Moles, by Theo. H. Schaffer, and those interested will send to the Station for a copy of this bulletin, which is free of charge.

## POULTRY

### EGGS AND HENS.

It is the old story. Eggs are right up again at this season to top notch prices, and those who have flocks in good laying condition, that is, last spring's pullets, with feed of the right kinds in abundance, report a good profit margin, while those with flocks which are only boarders, and who have to buy grain at present market prices, are running behind. It is a question of preparedness. With laying hens there is much larger gains to be made when the 300 candle power lanterns are used morning and evening to lengthen the day for feeding, than first appears. If laying hens are compelled to adhere to the Adamson law, they reduce the revenue to their "stock holders." They are not influenced by debate nor arbitration, but require vision and backbone material to carry on the egg laying campaign which in turn provides the sinews of war for good home government.

With most of our readers poultry is only an adjunct to either fruit growing, dairying or grain farming,

## TREES

### Walnuts Adaptable Kinds Fruits, Complete List Choice Shade Trees

Our Ash, Elms, Norway and Sugar Maples, are in fine shape for transplanting. In ornamental shrubbery we can supply Syringas, Hydrangeas, Snowballs, Spireas, Dogwoods and a very choice list of Roses.

We can fill the orders of fruit growers in every line for tree planting, including the ornamentation of the home yards. Send for our list. Salesmen wanted.

YAKIMA & COLUMBIA RIVER NURSERY CO.,  
North Yakima, Wash.

## DUCREST

The practical Steel Stump Puller of startling power and speed. Price only \$29.50, outfit complete. Can be sent by parcels post. Write for our booklet at once, which gives valuable information about land clearing, stump pullers, rigging of all kinds, tools and cable of rare merit. When in Seattle come any time and see a convincing deep rooted stump pulling demonstration by the famous **HAND and HORSE POWER DUCREST STEEL STUMP PULLERS**. Made in six different sizes and pulling power, to satisfy anybody. Beacon Hill Street car will drop you at the door.

DUCREST STUMP PULLER & TOOLS MFG. CO.  
947 12 Ave. South Seattle, Wash.

and in too many cases insufficient attention is given, not for need of time or means, but rather for want of thoughtfulness and a wrong idea as to the actual value of poultry.

Provide quarters which can easily be kept clean, ample shelter. Fowls cannot do well when subjected to draft and there must be plenty of roof to afford shelter from continued rains. Just prepare first by planning, then by working out a system which will facilitate labor, provide for cleanliness and abundance of proper feed in advance of the time it is to be used.

There are many natural advantages for profitable poultry raising in the Pacific Northwest, when combined with a little timely skill and activity, as a preparedness measure.

#### PREMIUMS.

One large Candidum Lily bulb, produced in Washington, and 2 years credit given for renewal payment of \$1.00. When remitting claim the lily bulb.

Any two of the following rose plants and two year's credit given for \$1.00.

American Beauty (crimson), Belle Siebrecht (pink), Bride (white), Dean Hole (silvery carmine), Druschki

The Ducrest inexpensive stump puller, pulling a giant fir stump of 8 feet in diameter by one man, without blasting. The illustration shows the man pulling out, with one hand, one of roots 3 feet in diameter and 24 feet long. There were 14 of these side roots to pull, then the cable was put around the body of the stump and pulled out of its hole with ease. It took this man only one day to sever the side roots, pull them all out of the ground, then the stump, pile all of them, and level up the hole ready for cultivation. The size of the stump puller is Ducrest No. 1. As compared with any other way, considering the value of labor, leveling and

## Raw Furs

### Mole Skins Especially

We pay highest market prices  
Write us for particulars.

FRED EDWARDS  
& BROS. FURRIERS  
Established 1883

923 Broadway, Tacoma, Wm.

## Moorefield Baths

Treatment very successful for those afflicted with rheumatic ailments. Rates reasonable. For particulars write or call  
W. SPENCER, Mgr.,  
7th St. and Pacific Ave., Tacoma, Wash.  
Please Mention This Paper.

(large white), Gen. McArthur (crimson), Hugh Dickson (red best), Jonkheer (carmine), Kaiserinne (clear white), Killarney (carmine pink), La France (selvery rose), Mrs. A. Ward (Indian yellow), Perle of the Garden (golden yellow), Prince Camille de Rohan (dark crimson), Ulrich Brunner (red).

NORTHWEST HORTICULTURIST & DAIRYMAN, Box 1604, Tacoma, Wn.

## MORE EGGS

When You Need  
Them Most

# LILLY'S

### HIGH PROTEIN EGG MASH

Produces eggs in abundance.  
Fed in conjunction with  
Lilly's Chick Mash you'll be  
astonished at the result.

SOLD BY ALL DEALERS

Lilly's, Seattle

## Cockerels EGGS

A few choice  
Brown Leghorns at  
bargain prices  
while they last.

From White,  
Brown and Buff  
Leghorns and B.P.  
Rocks; high quality  
stock.

Write for prices.

Single setting or lots.

FRED A. JOHNSON,  
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## H. L. BLANCHARD'S POULTRY FARM

BREEDING STOCK FOR SALE  
—Pedigreed Cockerels; S. C. White  
Leghorns; Barred Plymouth  
Rocks.

All stock vigorous, healthy and  
of superior quality, as shown by  
our trap nest records. Satisfaction  
guaranteed. Call or write.  
Prices reasonable.

BLANCHARD POULTRY YARDS  
Chimacum, Wash.

One Hawthorne (red or white), and  
2 years credit given for \$1.00.

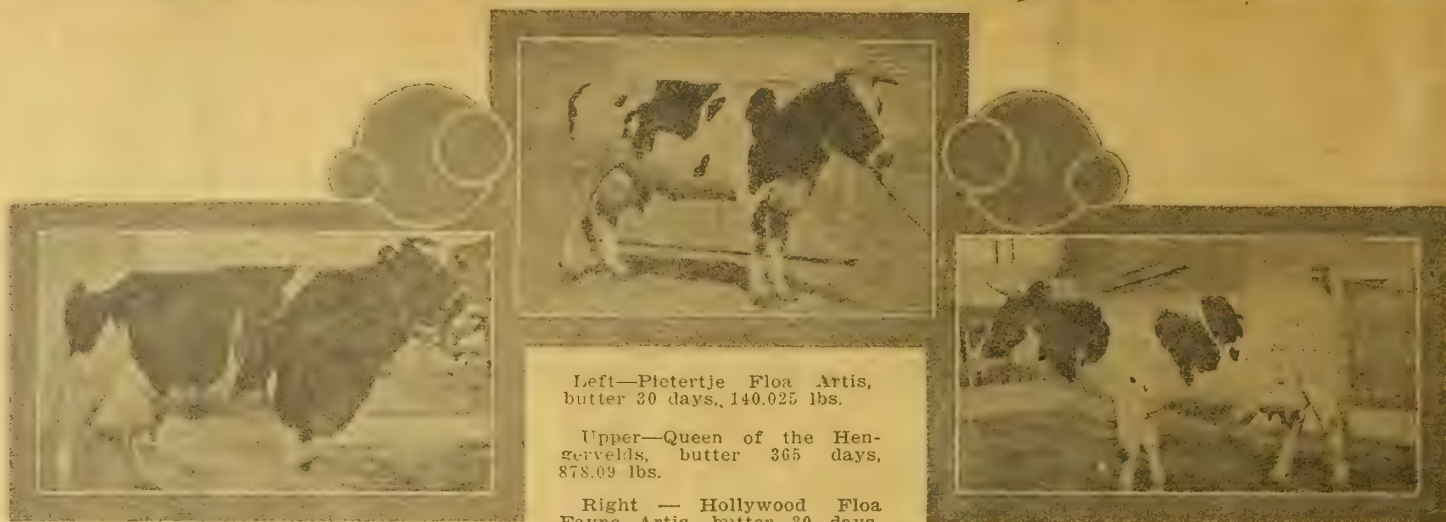


disposition of the stump this puller was an economical method of removing this monster.

A little powder is used subsequently

to crack the large pieces, so they can be burned in a manner to prevent any destruction of humus in the soil.





Left—Pietertje Floa Artis, butter 30 days, 140.025 lbs.

Upper—Queen of the Hengervelds, butter 365 days, 878.09 lbs.

Right — Hollywood Floa Payne Artis, butter 30 days, 90.4 lbs., at 2 yrs. 3 mos.

# PUBLIC AUCTION

## AT THE HOLLYWOOD FARM

of This Years Surplus of Registered Holsteins 70 Head  
**SATURDAY, OCT. 21st, 1916**

Two young bulls; the average yearly records of their two nearest dams are not equalled by any bull in service in the Northwest.

Six young bulls, with high official backing.

Sixty females:

One 20-lb. junior 2-year-old daughter of a 32-lb. cow, who has also produced a 23.48-lb. junior two-year-old.

Eight daughters of dams with official records of over 25 lbs. butter.

Sixteen daughters of dams with official records of between 22 lbs. and 25 lbs. butter.

Fifty-four females that have better than 30-lb. sires.

Forty females, bred to 30-lb. bulls.

All animals sold with a 60-day guarantee. Their official Health-certificate will take them anywhere in the United States.

A prize will be offered by the Hollywood Farm for an official A. R. O. record of a heifer with first calf, or, for the raising of an A. R. O. record of any animal.

Write for catalogue, and plan to come to this sale. An unequalled chance to get a foundation for a high-class registered herd.

Auto-transportation leaves Hollywood Store, 4th and Pine Sts., Seattle, at 8:00 to 9:30 a. m., and return after sale. Round trip \$1.00.

## HOLLYWOOD FARM, HOLLYWOOD, WASHINGTON

On the Northern Pacific Railway (near Seattle) on Sunset Highway.

GEO. A. GUE, Sales Manager



Our First Prize Holstein Herd at Western Washington Fair, Puyallup, Washington, 1916.

Prosperity outlook for the dairy industry is better at the present time than ever before. We must continue to have butter, milk and beef.

Our population has increased more rapidly than our ability to produce the needed supply. Consequently, prices are rising and in the near future we must expect to pay more for dairy products than we ever have done in the past. The available number of dairy cattle is not sufficient to supply our needs at home, proven by the active demand from all over the United States for the Black and White cow. Europe has depleted her herds and today the value of a dairy animal is far greater than ever before. After the war, Europe must

come to us for her stock to build up the industry. This will mean that the first class Holstein Friesian cow will bring more money than she has ever done. The price of dairy products will have to rise for the demand will be greater. Now is the time to purchase your Holstein Friesian cattle!

Why HOLSTEINS? Because the Black and White breed hold practically all the world's records for milk and butter production. The per cent of profitable animals is greater than any other breed. The Black and White cow leads them all!

When you desire first class Holstein Friesian dairy stock call and inspect our large herds or drop us a line.

## VAN WOERDEN & FISHER

Thomas, Wash.

Midway Between Seattle and Tacoma



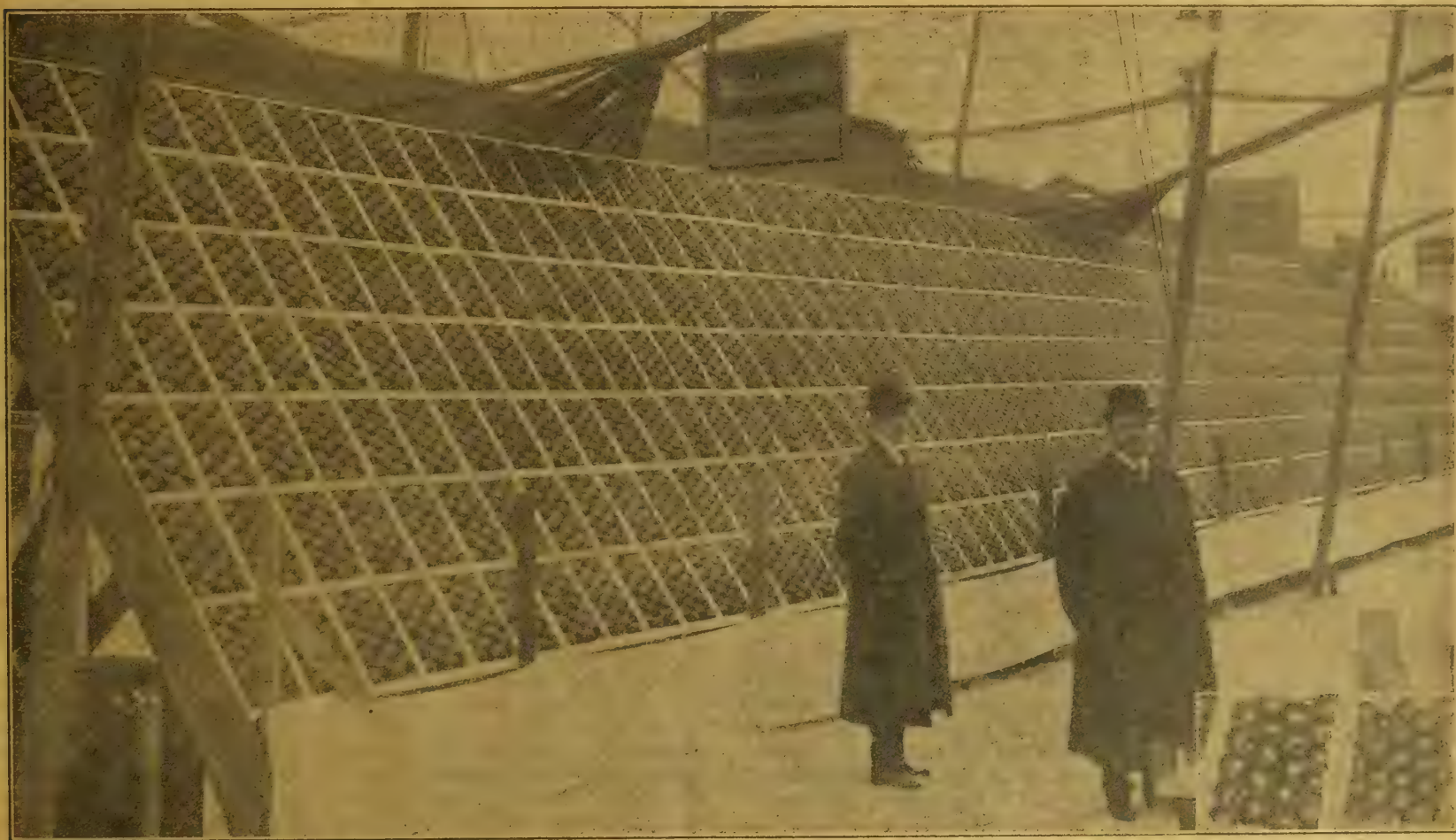
# NORTHWEST HORTICULTURIST & DAIRYMAN

POULTRY  
AGRICULTURE, STOCK  
HOUSEHOLD

Twenty-ninth Year

TACOMA AND SEATTLE, WASH., NOVEMBER, 1916

No. 11



According to the office of Market and Rural Organization, United States Department of Agriculture, the State of Washington shipped 3379 carloads of apples for the season ending October, 1916, which is more than shipped by any other state except from the Potomac Valley, where the state line is not defined.

Commercial apple growing problems are carefully considered at Spokane this month.



The Universal Tractor attachment applied to a Ford car being demonstrated on the Richmore Farm near Tacoma, Washington. This is one of the inventions which will serve to reduce the cost of farming operations, thus helping to increase the profit margin for the fruit grower, dairyman or general farmer.



# NORTHWEST HORTICULTURIST

Agriculturist and Dairyman.

C. A. TONNESON,

Editor and Proprietor.

Address all communications to Box  
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Payments are due one year in advance.

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S. B. Nelson, Veterinarian.

A. B. Nystrom, State College, Pull-  
man, Wash.

The blue cross X mark, if any ap-  
pears, is a reminder to renew sub-  
scription.

## RISING MARKETS.

The increased market prices for all kinds of farm and orchard products affords an opportunity for a good profit margin to those who are prepared to plant and reap without too great an increase in expenses. The wheat farmers in the Pacific Northwest have done exceedingly well the past three years, crop yields having been good and prices high. The market prospects for next year are again for high grain prices, but the fall has been too dry for early seeding and more spring sowing than usual is likely to be done. Tractors are being sold rapidly which signifies the employment of a less number of but more skilled laborers. Preparations are being made to plant a larger acreage of corn to balance up the feed ration both for the dairy and the beef cattle. Some of the stock raisers are inclined to sell their cattle with a view to giving all their attention to grain and hay raising. For those who have live stock of low production, such change may be to their best interest, but the dairy cows yielding over 400 lbs. butter and above 8000 lbs. milk a year should be kept if labor conditions will permit. The rising market for grain and hay is likely to decline sooner than the dairy cattle market and a herd of good producing cows will be costly and difficult to obtain during the next few years.

The rising produce market is an incentive to do more land clearing in the Coast section. A large number of stump pullers and much powder are being sold to farmers who are increasing their fields for cropping. Delayed seeding on account of a very dry fall will cause a rush at spring planting. Do not hesitate to arrange for the necessary vetch, grass or grain seed, for the demand will come suddenly and it will be heavy.

The rising potato market will make good money for those who have a stock of choice seed. Good potato seed growers will serve for the mutual benefit of themselves and many farmers during the next few years.

Poultry as an adjunct to dairy and to fruit farming is increasing gradually. In this country the by-prod-

ucts on farms for the poultry food supply is limited and those who buy grain at present prices are hazarding their profits. Farmers who have provided themselves beforehand with ample grain supply, sufficient green feed, proper shelter and artificial lighting are realizing handsomely because of the high egg market. Efficiency in planning every detail of a proposed line of husbandry is essential. First, make the work as easy as possible. Second, get the best stock and the best tools which means will permit and keep on aiming for improvements. Third, make hay while the sun shines. The present prospective profit margin caused by rising markets may not continue for many years, therefore prepare to improve every opportunity afforded and within reach, for the year 1917. Keep the bow of the boat towards the shore of success, regardless of what may be the tempest raging, during this tide of rising markets.

## TREE PLANTING.

There is a considerable amount of tree and shrubbery planting for domestic use on the Pacific Coast this season. Some of the farmers engaged principally in dairying are giving attention to the ornamentation of their door yards. Dairymen often become so interested in their cows that they have neglected to plant needed trees and attractive flowering bulbs and shrubbery. This work is to be encouraged. Now is the time to make the selections and do the planting. Write to the nurseries for their catalogs or have their agents call to give helpful information about planting.

## CLEARING LAND.

Many of our readers are figuring on clearing some additional acres of logged-off land. They find the best and cheapest way to be largely a local problem. A considerable number are using powder, not with extravagance because of its higher cost. In many clearing operations during the past years about twice as much powder has been used as was actually necessary, according to the statement of those who are in position to know. Powder manufacturers are giving numerous demonstrations to show how to remove stumps with powder most economically and advantageously.

Many different kinds of stump pullers are also being used, from the small hand power to the horse and the gasoline engine pullers, all with more or less success. Some are using the stump pullers first, then enough powder to shatter the large pieces enough to handle well for burning, while others use powder enough first to sever the stumps while standing, then pull the pieces with a small machine.

The experiment station staff and the county agents are preparing to co-operate more thoroly with other agencies, in the matter of information about the use of powder, and how best to solve any specific land clearing problem. It pays to determine fully beforehand on some definite method for any particular piece of work. Good engineering provides for the expenditure of money and energy most efficiently and this applies whether the job is large or small in land clearing.

## BUYING CAPACITY.

Evidently there is buying capacity on the part of the great mass of consumers in the eastern states. This is especially noticed in the fresh fruit trade. It is reported that in apples shipped east a majority of the Skookum output, which was originally estimated at 1000 to 1100 cars, has been sold. The Jonathans, Grimes Golden, Delicious and Winter Banana have all been sold, the bulk of the fruit remaining being Spitzenbergs, Winesaps, Newtown, Staymen and a few Rome Beauty.

The fruit that has been sold has been purchased by representative houses in some of the most prominent markets. John B. Drake & Co. have the apples at Boston; F. E. Nellis & Co. at Chicago; Alfred Rush & Son, Detroit; Joseph Chalona, New Orleans; George Hitz & Co., Indianapolis; Crutchfield & Woolfolk, Pittsburgh; Trimble Bros., Omaha; Bigalow Fruit Co. Cleveland, and Pasterina & Schiappacasse, Milwaukee. Fruit has also been sold in about fifty other smaller markets.

An advertising campaign has effectively done its work. But the Washington apples are being consumed faster than for several years past.

## SOME FOREST PRODUCTS.

In addition to the ordinary uses of wood with which we are familiar, mankind is dependent upon the forest for a variety of products whose appearance does not indicate their origin, say members of the Forest Service. Numerous as these products are, and as extensive as is their use at the present time, science is constantly learning new constituents which enter into the makeup of wood and is finding new uses to which these constituents and those already known can be put. Powder for munitions or blasting, disinfectants for protection against contagious diseases, and artificial silk for clothing are among the products obtained in whole or in part from wood.

Charcoal, as everyone knows, is essential for the manufacture of black powder. All of the acetone used as a solvent in making nitro-cellulose powders is derived from acetic acid, a product of hardwood distillation. Great Britain, it is said, is dependent upon the United States for acetone used in making cordite. Black walnut is a standard for gunstocks, and has been so much in demand for the past two years that our supply of this valuable wood has been considerably reduced and other woods, notably birch are being substituted. From Europe comes the complaint that there is a shortage of willow for making wooden legs.

Pure wood alcohol is the only substance which can be converted commercially into formaldehyde, which is universally used for disinfection against such contagious diseases as smallpox, scarlet fever, and tuberculosis. The experts at the Forest Products Laboratory have conducted extensive experiments on the production of grain or ethyl alcohol from wood and have been successful in experimental work in raising the yield and lowering the cost of production. If this process can be put on a commercial basis, the foresters say, it will result in putting the mil-

lions of tons of coniferous sawdust and other material which is now wasted every year to a profitable use.

By converting cellulose, one of the elements of wood, into a gelatinous material, known as viscose, a wide field is opened up for the utilization of wood waste, and a new line of products, varying all the way from sausage casings to tapestry, is added to the already lengthy list. Many of the so-called "silk" socks, neckties and fancy braids now on the market contain artificial silk made from wood.

About nine-tenths of all the paper which we use is made from wood. Besides the detailed investigations of the methods of making newsprint paper, and of the production of paper from woods hitherto unused for that purpose, which have been conducted, kraft paper, which compares favorably with the best on the market, has been produced experimentally at the Forest Products Laboratory from longleaf pine mill waste. This kraft paper is brown in color and is very much stronger than ordinary papers. It is used for a variety of purposes, and, cut into strips, is spun or twisted into thread which is then woven into onion and coffee bags, matting, suitcases and wall covering, similar to burlap, and furniture closely resembling that made from reeds, as well as other articles of common use.

Within the past year the Forest Products Laboratory has, by co-operating with manufacturers, succeeded in getting a dye made from mill waste of osage orange put on the market as a substitute for fustic, which we import from Jamaica and Tehuantepec.

These are only a few examples of the various lines of work carried on at the Forest Products Laboratory, say the men in charge. Other activities, ranging all the way from the study of decay in wood to that of the resistance of wood to fire are in progress, and new discoveries are constantly being made. Incidentally, the Forest Products Laboratory, at Madison, Wisconsin, was the first of its kind in the world and is probably still the best equipped. With the possible exception of Germany, no other country has done as much as the United States systematically to investigate the possibilities of its forest resources.

## CONTEST.

This is a country of majority rule, and it is well for those who have worked faithfully in the defeated party to submit cheerfully.

There is plenty of opportunity to help in making the crooked paths straight and the rough places plain. Happiest are they who strive to be useful, energetic and kind in whatever position for endeavor.

Contest is a fundamental law of our universe and men must choose to do the right or drift into the wrong. Before the last election there was some doubt as to the outcome of the wet and dry measures in Washington, but the answer as to whether or not the liquor traffic shall continue is plainly—no. The issue is likely to come up again, and it must be fought with patience continuously the same as many other evils.



## PEAR BLIGHT RESISTANCE IN TREES AND STOCKS

F. C. Reimer, Southern Oregon Experiment Station, Talent, Oregon

Before the Pacific Coast Association of Nurserymen, June 22, at the Medford meeting.

Pear blight is now generally distributed from the Atlantic to the Pacific, and from Canada to Florida. Until recently some of the fruit regions along the Coast in the extreme Northwestern states were free from the disease, but it has been getting nearer to them each year, and last year it became established in the Willamette Valley of Oregon.

Pear Blight (*Bacillus amylovorus*) (Burr.) (De Toni) is generally regarded as the most serious disease of pear trees; and at the present time it is probably more destructive in the leading pear sections of the Pacific Coast than all other pear diseases combined. For more than a century in the Eastern States, and for fifteen years in some of the leading pear regions of the Pacific Coast it has been the nightmare of pear growers. Its work is so rapid and destructive that it often baffles and puts to flight the average pear grower. Only the intelligent, determined, and most vigilant pear grower can cope with this disease successfully; and with him it has usually been a costly fight.

The only method of combatting the disease at the present time consists in cutting out and destroying the affected parts of the tree, and thoroughly disinfecting the wounds. This method of combatting pear blight is successful when the work is properly done and the fight is carried on continuously and consistently.

At the present time with our present varieties and under our conditions this fight must often be carried on under the most trying conditions. Often a neighboring grower is neglectful and his orchard is a constant source of danger to the surrounding orchards. Most growers are dependent on hired labor for much of this work, and it must be frankly admitted that the average laborer is not fitted by nature or otherwise for such painstaking, and skilled labor as is often required. A poor blight cutter often does more harm than good by carrying the disease from one tree to another on his tools.

Even the most vigilant blight cutter often finds it very difficult to keep the disease under control during rainy weather. During such weather the disease works rapidly and owing to the fact that under such conditions one cannot work to advantage the disease spreads rapidly and usually works havoc with the trees.

It is evident from this that Pear Blight is a difficult disease to combat under present conditions. However, it does not offer insurmountable obstacles, and with our present knowledge it will be a much simpler task to combat the disease in the future.

### Resistance to Plant Diseases.

The simplest method of combatting any disease is to grow a variety which normally is resistant to the disease. Eventually many of our diseases will be combatted in this way. Splendid work is already being done along this line in planting varieties of English Walnuts resistant to Walnut Blight, varieties of sweet cherries resistant to cherry gummosis, and varieties of grapes for stocks which are resistant to Grape Phylloxera. In Southern Oregon the Spitzenburg apple is no longer being planted because of its great susceptibility to blight.

### Resistant to Pear Blight.

The ideal way to combat pear blight is to grow a variety resistant to this disease. I believe that ultimately this disease will be combatted in this way, and that in all of the orchards planted in the future it will be possible to reduce the amount of pear blight at least seventy-five per cent.

It is well known by our pear growers that even among the varieties commonly grown there is marked variation in their susceptibility to Pear Blight. For example, the Bartlett and Howell are much more susceptible than the Winter Nells, Anjou, and Comice. We have also found in our experimental work that the Forelle, a variety quite famous in the Santa Clara Valley of California, is probably the worst variety to blight that we have ever worked with.

During recent years other varieties, which are not generally known, have come to light which show marked resistance to pear blight, and some of these apparently will prove of commercial value.

A few years ago Douglas, a seedling of the Kieffer, was introduced from Kansas as a desirable variety showing marked resistance to blight. It is of better quality than Kieffer, although not equal to our best varieties in this respect. In our experimental work this variety has shown marked resistance to blight, although not immune to it.

For the past quarter of a century Mr. Charles Patton, of Charles City, Iowa, has been doing some valuable pear breeding work. He has produced certain new varieties which appear to be of value for the upper Mississippi Valley. Some of these are of good quality, and have shown great hardiness and marked resistance to blight under Iowa conditions. Mr. Patton's work means a great step forward in pear culture, particularly in the Middle West. Since his work has been done under conditions wholly different from those on the Pacific Coast the value of his new varieties will still have to be determined for our conditions. Mr. Patton's work, however, shows the possibilities of breeding pears resistant to pear blight. In this connection other promising varieties could be mentioned, but these will suffice to illustrate this principle.

### Resistant Varieties of Immediate Value.

Most of my hearers probably will say that there are so many factors to be considered in determining the commercial value of a new variety for our conditions that these newer varieties will be of little value to us for a

long time to come. I think that I can convince you, however, that some of these will be of immediate value to us.

In order to bring this matter clearly before you it will be necessary for me at this time to digress for a few moments to call attention to the most serious aspects of pear blight. It is well known by pear growers that the most destructive form of blight is that commonly designated as "body blight" or "trunk blight," that is, blight occurring on the trunk or larger branches of the tree. Here the disease does its most fatal work by destroying the cambium layer and young sap-wood. The upward and especially the downward passage of food is prevented and the tree eventually succumbs. This form of blight is often difficult to detect until it is well advanced and much damage has been done. Old tree trunks are often more or less irregular, containing deep crevices, in which the disease becomes established, and from which it is difficult to extricate all of the diseased tissue. Such diseased tissue serves to perpetuate the disease, by supplying millions of bacteria which are carried by insects to other parts of the tree where new infections occur when the conditions are favorable. Hence, such body blight has been termed "hold-over blight," as it is the connecting link between one siege of blight and the succeeding one. In other words, it serves as a storage house, harboring and protecting the disease during the winter and long, hot, dry periods in summer. It is well known that most of the blight bacteria in the smaller branches eventually die, especially during very hot and dry summers, or very dry and cold winters. If pear blight could be confined to such branches we would have fewer outbreaks than at present; and there would probably be periods when pear blight would be almost unknown in a certain region.

Such hold-over blight is particularly abundant in the succulent tissue of the trunks of the Bartlett and Bosc, as well as many other varieties.

I must say with all emphasis that this "hold-over" blight is the big problem in pear blight control.

### The Remedy.

The Bartlett is the great commercial pear of the Pacific Coast, and it serves our purpose so much better than any other known pear that we cannot afford to give it up. As I have already shown, the trunk of the Bartlett is its most objectionable feature. But there is positively no need of growing Bartlett pears on Bartlett trunks. This variety can be successfully grown by substituting the trunk of another variety. For his purpose we should use some variety which is markedly resistant to blight and which will make a congenial trunk for the Bartlett. During the past five or six years the Kieffer has been extensively used for this purpose, especially in Oregon.

Continued next month.

## HOLSTEIN SIREs FOR SALE

Young bulls, out of Johanna Sr Frayne (31 lbs.) Dam (22 lb. Jr. 4 yr.) out of Paul Mutual Dekol. Also a few cows, heavy milkers

JOHN CARLSON,

MANETTE, WASH.

### AGENTS TAKE NOTICE

Farmers and fruit growers are getting the highest level of prices for their products in twenty-five years. Our best salesmen are turning in from \$500 to \$700 per week—other men from \$100 to \$500. There is a big opportunity for you to make money this Fall and Winter selling general lines of nursery stock to farmers and others in home orders, including Fruits, Flowers, Shrubbery, Shade Trees, etc. OUR NEW AGENTS CONTRACT IS A WINNER. Any young or middle aged man can succeed. Write at once for choice of territory. Address, PACIFIC NURSERY COMPANY, 122½ Grand Ave., Portland, Oregon.

### COST OF MILK.

According to experiments carefully made covering a period of five years, on four farms, located respectively in different states, the relation of feed cost in proportion to yield of milk is, for a herd averaging 2349 pounds milk per cow a year, \$1.87, while for a herd which averaged 6445 pounds milk per cow it was only 98 cents per 100 lbs. milk, the feed being figured at same rate in both cases. Now it is plain to be seen that when a farmer raises crops and has cows, both of which are below average that he is in bad shape. If

## We Want MOLE SKINS

The London dressing and dyeing process, established in this country by us, makes possible the sale of American mole skins for commercial use. Turn the crop-destroying mole pest into profit. We will pay highest prices for all your mole skins. Ship them to us at once. Check by return mail. Write for Trappers' Guide, Supply Catalog, Game Laws, Market Reports. All FREE!

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## Twenty-five Per Cent Reduction

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We need more room in our nurseries for further planting.

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his crop yields are not good he might buy some teed for good producing cows and come out ahead, but he can



attain maximum results by making his acres yield their best without excessive expense, and feed the crop to cows which yield 7000 pounds milk or more annually. There are too many one and a half ton per acre clover crop yields where there ought to be over three or four, and the same applies to vetch, alfalfa, corn or other grain crops, and there are far too many cows below the line of profitable milk and butter fat yields as has been ascertained by the cow testing associations.

This is a good time of the year to take stock, plan for growing the best crops possible in 1917, and manage to get rid of the cows which are below normal paying profits as soon as possible. The quality of the cows as much as the cost of feed determines the cost of milk.

#### COW TESTING EXHIBIT.

The live stock show, at North Yakima, November 20 to 27, will have a cow testing exhibit under the supervision of Prof. Neal C. Jamison, of the State College, Pullman. The demonstration will include a cow that produced only 80 pounds of butter in a year and right beside her a cow that produced nearly 1000 pounds of butter in a year. Both cows had the same feed and identical treatment. This will be a practical lesson to the dairymen of the state.

Prof. Jamison has been conducting cow-testing clubs all over the state this year, and will bring cows of each distinct type, together with the records made under test to show the individual looks and what she can do. It is not always the good looking cow that produces at the milk pail. The good looker may be eating her head off every month of the year.

Cow testing for butter fat production is doing more to develop the dairy industry in a substantial manner than any other single feature. The weak part of the system is that the remuneration is not sufficient to attract the class of men for the work who would better serve as educators in addition to the routine testing work. The scrub bulls are being discarded, star boarders going to the beef block and the average profit margin for dairymen who participate increased very materially.

#### PREPAREDNESS AT FARROWING TIME IS MONEY SAVED.

Farmers who intelligently feed and care for their pregnant sows, so as not to overload them with fat, but instead give them feeds for the development of bone and muscle, are on the right road toward the production of strong, healthy litters. Their preparedness program, however, does not end here.

Two weeks before farrowing the sow should be put into a farrowing pen, so that she will become acquainted and contented in her new quarters. The farrowing pen should be dry and free from draughts. Provide the pen with a guard rail, made of 2x4 inch planks set 8 inches from the wall and 8 inches from the floor to prevent the sow from crushing the pigs against the wall. Use only a small quantity of bedding; leaves or straw are preferable. See that the sow has plenty of fresh water.

It pays to keep the sow quiet.

Assistance at the time of farrowing should be at hand if needed, but the sow need not be helped if she is getting along well. In cold weather put the newly born pigs in a well warmed basket, and after farrowing is over the pigs should be placed with the sow care being taken that each one gets to a teat. When the afterbirth is passed, it should be removed from the pen at once and burned or buried.

After farrowing the sow should have nothing but water and a little thin slop for the first day. The feeding for the first three or four days should be light, and the time consumed in getting the sow on full feed should be from a week to ten days, depending on the condition of the sow and the size and thrift of the litter. It takes plenty of sow's milk to make healthy growing pigs. If the pigs begin to scour, feed the sow less and give her plenty of strong lime water.

It is very necessary that the little pigs have plenty of exercise and all the sunlight that can be given them. Do not allow the pigs to run out during a cold rain. If possible, provide green feed or roots. These keep the sow healthy and cheapen the ration. Encourage the pigs to eat grain after they are three or four weeks old. Build a creep for them so they can feed alone. At this age feed for bone and muscle. Give them all the skim milk you can. If skim milk is not available, give them some meal and plenty of pasture. In about eight or ten weeks the pigs will have practically weaned themselves. After they have been successfully weaned the most perplexing job is over.

By putting into practice the essential points above mentioned the number of pigs raised to weaning should be increased. Hogs never fail to respond to good care. Kind treatment always means contentment with its corresponding profits.

As farmers get into possession of dairy cows of higher average value and as dairying develops to a more staple plane, live stock insurance will be written more freely. This will encourage the buying of a higher producing type of cattle.

All classes of live stock should return at least \$140 for every \$100 worth of feed consumed, and many farmers get much more than this from their cattle. Seek to know the producing capacity of each individual animal kept and figure out ahead for the year some definite feed cost. This is the safe way for progress.

The Farmers' Short Course Winter School, under the auspices of the Western Washington Experiment Station, begins January 1, 1917, continuing six weeks. Write Superintendent W. A. Linklater, Puyallup, Wash., for particulars.

#### WASHINGTON APPLE SHIPMENTS.

In commercial apple shipments this season, ending October 16th, the State of Washington ranks second to any other state or district, with 4926 car loads, being surpassed only by the Potomac Valley, which shipped 4945 car loads. New York was third with 2,315 car loads, according

# Farm Products Wanted

**Great Market Opportunities prevail with profit margin, largest for those who produce at lowest cost.**

We cheerfully submit to majority rule, as that is the basic principle on which this government is founded, and with good cheer to all readers of this paper let us turn our attention to the industry of production and the business of marketing.

Wonderful opportunities are open to the farmers of the Coast section, particularly in the line of dairy products. The range for pasture and the feed cost is the great problem for solution.

It has been demonstrated that on the open prairies, like that at Sequim, at Yelm and on thousands of acres lying south of Tacoma, that with water for irrigation that from 4 to 6 tons of clover, 15 to 22 tons of vetch-wheat and great crops of corn can be grown. An owner of a farm now under the ditch at Yelm sold \$5000 worth of farm products off of 40 acres last year. He planted 5 acres of rutabagas intended for his own feed, but sold the roots on this patch of ground for \$1000.

We have several thousand acres of this kind of prairie land, some of which is irrigated, and tracts at lower prices where the water can be pumped at an annual irrigation cost not to exceed \$3 per acre. This land will be sought by dairymen and fruit growers and we are glad to give full particulars to any desiring to investigate.

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China LILIES Each .15 two .25 Dz. 1.50

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to the Office of Markets and Rural Organization.

#### THE CHINESE RASPBERRY.

This new species of raspberry, Rubus Xanthocarpus, was discovered in 1885 by the celebrated Russian traveler Grigori Nikolajewitsch Po-

tanin in the Chinese province Kansu (Latitude about 40°) and in 1890 Bouvalot and Prince Henry of Orleans found it in the mountain range separating the two Chinese provinces, Sitschuan and Yun-nan (Latitude about 27°). Bureau and Franchet first found it in 1891. The



plant at the Imperial Botanic Gardens at St. Petersburg, Russia, were grown from seeds sent by Potanin and fruited for the first time in July, 1891. The above was translated for me from a Russian bulletin at the botanic gardens. I saw those plants in heavy bearing August 15th, 1897, on the grounds of the botanic gardens. The plant is trailing in habit and the vines die off every fall after the ripening of the fruit in the same manner as *rubus arcticus*. The fruit is ovate, bright yellow, large, fragrant, sweet, quality good. The plant is hardy at St. Petersburg. At the South Dakota Experiment Station, says Prof. Hansen, the plants grow readily from root cuttings and showed a decided sprouting tendency. In California these plants do remarkably well and are great yielders of large delicious flavored berries.—S. L. WATKINS, Pleasant Valley, Calif.

#### NATIONAL APPLE SHOW.

The National Apple Show, to be held at Spokane, November 20 to 25, will attract the fruit growers from the leading districts as usual and the problems pertaining to the shipping and marketing more completely solved. Every year adds its experience and while some of the principles are thoroughly understood there are yet features in the apple shipping operations which causes and is likely to continue to cause trouble unless remedied. In time the apple growers of the northwest will learn, as have the fruit growers in California, that the control of the crop must remain with producers until it reaches those who will buy it outright.

Another item is the grading rules which will probably not be materially changed. The growers either will or will not control this meeting. If they attend in sufficient numbers they will have the opportunity to express their wishes and have them prevail. If they fail to attend other interests connected with the apple industry will dictate.

#### Preliminary Discussions.

The packing room demonstration at the National Apple Show and this grade and pack meeting go hand in hand. It will be in the packing room that the informal discussions will take place that will mature at the Saturday meeting. Evidences are abundant that the five heavy producing sections will be well represented in the attendance before the formal session. These districts are Spokane, Wenatchee, Yakima, Oregon and Southern Idaho. Just what figure Yakima will cut in the discussions depends largely upon what part her growers take in the preliminary informal discussions.

#### Growers' Demonstrations.

W. P. Romans, who has been in North Yakima in the interests of the National Apple Show, said that it is the intention to make the grade and pack demonstration the most practical undertaking possible and altogether apart from the work done by the professionals there will be demonstrations by growers, not only at the district exhibits but in the general demonstrations. Sufficient orchard run apples have been retained by one Spokane shipper to permit of constant work throughout the week so that all phases of the grade and pack proposition will be

demonstrated. The district exhibits will call out demonstrations as to extra fancy, fancy and C grade packs from nine box lots. Then these three packs will be rolled together and separated again by the real apple men, the producers.

#### Many Districts Pledged.

Hood River is pledged to be present and Bitter Root and the British Columbia Okanogan, as well as the various other Northwest producing sections. There will be an Eastern display of commercial apples in boxes, barrels plates, etc. An educational and not a competitive display.

The Chamber of Commerce and Merchants of Spokane are co-operating nobly to continue these apple shows which affords a means for the development of the apple industry on a large commercial scale. Leading financiers are coming forward to help develop a standard marketing system and as fast as the growers can standardize their products and their methods, with some definite degree of regularity, then will money be available to handle the crops.

#### LEADING CROPS.

The net results of the month show further losses of 3 million bushels of spring wheat and practically 18 million bushels of potatoes, bringing the latter crop to the round figure of 300 million bushels, almost 60 million bushels below the crop of last year. Slight declines occurred also in oats, barley, tobacco, apples, sweet potatoes, and a material decline in buckwheat. Favorable maturing weather added over 8 million bushels to the corn crop, and almost 3½ million bushels to the grain production of the dry land sorghums (kafir, milo, feterita, etc.), increased flax about a half million bushels and rice about a third of a million bushels.

#### Corn.

Corn was greatly favored during the first half of the month of September by generally ideal growing and maturing weather, but in mid-September, generally killing frosts stopped further growth throughout the main corn belt of the north central states. Notwithstanding this latter unfavorable development, the month registered an increase of 8,400,000 bushels over the September 1 promise. This increase, while enormous in absolute quantity, is only about one-third of one per cent of the total production of 2,717,932,000 bushels now promised. The present indicated crop is about 337,000,000 bushels less than last year's crop, but is within a fraction of one per cent of the five-year averages.

In New England and the Middle Atlantic States little frost damage was suffered except in low spots. In the South and West no material changes are reported, there being slight improvement or decline dependent upon the presence or absence of an adequate supply of moisture.

#### Spring Wheat.

The prospective crop of spring wheat was lowered slightly during the month of September, a decline of 3½ million bushels being reported. The present indicated crop is 152,851,000 bushels, which is considerably less than half of last year's crop of 356,000,000 bushels and about two-thirds the average crop of the past five years. Slight declines were

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This wonderful invention does TEN TIMES the work of TWO MEN out in the woods. It's as necessary to the man cutting wood as the automobile is to the man who has to get somewhere in a hurry.

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shown in Minnesota, North Dakota and Montana, and a slightly better outlook was reported from South Dakota and Nebraska. Indications elsewhere remained substantially the same. In the western plateau and Coast States the crop is generally good, and almost equal to last year's crop, except in Eastern Montana and Wyoming, where it suffered from black rust.

The quality of winter and spring wheat combined is 87 per cent compared with 88.4 per cent last year, and a ten year average of 90.3, but, whereas this year's winter wheat is of fine quality and spring wheat very poor, last year's winter wheat was exceedingly poor and spring wheat fine.

#### Oats.

The present crop, while short of last year's bumper crop to the extent of about 311,000,000 bushels, is about 70,000,000 bushels greater than the average crop of the past five years. The outturn in Wisconsin, Illinois, Iowa, Texas, Washington, Oregon, and several southern states, is heavier than anticipated a month ago.

#### Barley.

The indicated total barley crop is 183,536,000 bushels, being about 2½ millions less than the five year average.

#### CELERY PREPARATION.

##### For Retail Trade.

By D. M. Butler, Assistant in Vegetable Gardening, Oregon Agricultural College.

Attractiveness and cleanliness are the main attributes of a good bunch of celery if it is to sell quickly and at a good price. Whether the product is to be sold from a wagon,

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through a retailer, or a public market, care should be exercised in grading, bunching and wrapping.



As soon as brought from the field the produce should be trimmed by removing the injured and broken outside leaves sufficiently to make the stalks appear uniform in size, which should be in proportion to the shape of the variety. The stalks should then be immersed in a washing vat of cool water, where they can be removed at the convenience of the packer.

From here they are placed on the wrapping table, where they are bunched, tied and wrapped. This operation gives the opportunity for grading, both for size and shape of the individual stalks and for size of the bunches. Several methods of tying, depending on the demand, are common one of which is to use common, heavy, soft cord, wrapping the bunch securely near the base and also near the top. A modification of this method, is to use colored tape or ribbon, which adds to the attractiveness of the package and is more common on bunches of from three to eight stalks than on bunches of twelve. Another method still more attractive is to wrap the bunch in oiled paper, preferably showing a field scene with the name of the grower or some other advertising material. Such practices as the last are more common in selling from public market or by other methods direct to the consumer, than in selling through the retailer.

A convenient device for tying celery in bunches of twelve stalks can be made as follows: Bore two one-inch holes near the edge of the bench as far apart as the bunch is wide, and in these fasten securely two round pins 6 to 8 inches long. Lay a cord or tape on the bench about two inches behind the pins, which in order to be of the right length should not be cut until the bunch is fastened. Place a similar cord about twelve inches from this for tying the tops. Then place the stalks on the cords or tape their bases between the pins, which hold them firmly and a sure uniformity in size of bunch.

If the bunch is to be shipped, it should be given to the packer and crated according to size, care being taken to avoid mixing sizes in the same package. The containers should be lined with heavy paper.

Small investments in tape, ribbon, wrapping paper and stencils return large rates of interest and more important than this, develop a substantial and regular trade.

#### APPLE CROP.

The present promise is for a crop of 66,169,000 barrels, a decrease of 1,510,000 barrels from the promise of September 1, about 10,500,000 barrels less than realized last year and just about equal to the average crop of the past five years. The decline, during the month is accounted for partly by the small size of the apples due to deficiency of moisture, which mislead some observers, and to continued falling of fruit during September.

#### SPRAGUEA UMBELLATA.

(Painted Snow Flower.)

It is remarkable that a plant of such singular beauty has so long escaped cultivation, especially so

when it is so easily grown from seeds and the roots are easily transplanted and grow well.

When the winter snows of the upper Sierras commence melting, the bright green leaves of the spraguea appear, and in June it is at its height of flowering season.

Along the rocky wind swept plateaus and mountain meadows the ground is carpeted for miles with this lovely flower. The plant is low and prostrate in habit and sends up from two to five flower stems, varying in height from five to eight inches. The top is surmounted with a snow white cottony ball of flowers, which are spotted with the brightest shades of delicate pink, rendering the flower one of great beauty. Its blooming period is from three to five weeks.—S. L. WATKINS, Pleasant Valley, California.

## IRRIGATION

### INVESTMENTS FOR FARMERS

Here are timely suggestions by the Reclamation Record:

1. Some good brood sows.
2. Feeding balanced rations.
3. A dairy association.
4. Clean attractive farmsteads.
5. Two good live-stock books.
6. Cull out all inferior animals.
7. Improved barns and fences.
8. Plant shade trees for your live stock.
9. A State stallion-registration law.
10. Learn how to judge live stock.
11. Membership in a State live-stock association.
12. Community cow-testing associations.
13. Better sanitary surroundings for live stock.
14. A small flock of sheep on irrigated lands.
15. The best agricultural paper.
16. The best live-stock paper.
17. A complete set of farm account books.
18. A week at the farmers' short course at the university.
19. A few gallons of crude oil to kill lice on live stock.
20. Sell scrub sires and purchase registered ones.
21. Cooperative live-stock marketing associations.
22. Little special care and attention given the young animals.
23. Maintain the fertility of your farm by keeping live stock.
24. A trip to your county and State fairs to study live stock.
25. Community ownership of good stallions, jacks and bulls.
26. A holiday to visit your most successful neighbors.
27. A post card to your agricultural experiment station for advice.
28. One hour every day figuring out methods to save steps; make the work more efficient and more profitable.
29. Growing crops especially suited to produce feed for your live stock.
30. Adapt your system of farming to suit soil, climate and stock.
31. Making the boys partners in the farm by giving them a lamb or pig.

#### SHEEP ON EVERY FARM.

Dr. R. H. Williams, animal husbandryman, University of Arizona Agricultural Experiment Station, be-

**Smalley** Will Make More Profits for You on Your Farm

**The Powerful Grip Hook Smalley**

will eat up three days' work in one day. Built in eight sizes—there's one that's just right for you.



The satisfaction that Smalley users feel is not only caused by their additional profits but there is a wonderful satisfaction in having the very best machine for the purpose on the market.

Saves on labor, in time and does the work better. While the 3 in 1 feature alone makes this the most necessary of farm machines.

Write today for our booklet describing the machine itself and its many uses. Let us quote you the prices of the different sizes. Hundreds are working on farms in the Northwest today. Better get yours now.

**RM WADE & CO.**  
SINCE 1882  
PORTLAND, ORE. - SPOKANE, WY.

**The 3 in 1 Cutter**



No Gumming  
Or Scoring

—when you use Mica Axle Grease. The grease is always evenly spread and it lasts. Mica Axle Grease would still be good grease even if it contained no powdered mica. But the mica makes it even better. Gives extra lubrication—forms a smoother surface—makes the grease last twice as long. Get a can from your dealer today.

**Standard Oil Company**  
(California)

# MICA AXLE GREASE

## WANTED Men with Gray Hair

Throughout Washington and Idaho we have several good openings for solicitors—elderly men preferred—selling our reliable, non-irrigated stock, including all kinds of Fruit Trees, Shade and Nut Trees, Ornamental Shrubbery, Roses, Vines, etc.

Established in 1867, our company has been supplying planters with dependable nursery stock ever since.

The name "ORENCO" carries with it the assurance of the utmost "Reliability and Satisfaction" in nursery purchases.

It makes selling Orenco Trees easy.

Don't you believe if you were to work as faithfully "selling Orenco trees" as you are now doing you would make more money and make it easier?

Let us explain to you our terms to agents.

Full time men preferred, but part time if desired.

If you can sell trees we want you and you need us.

Many a man is a good salesman but don't know it till he tries. Why not try?

For further particulars write  
**OREGON NURSERY CO.**  
Orenco, Ore.

## CLOVER VETCH ALFALFA GRASS & FIELD SEED

### FOR FALL SOWING

**SPECIAL MIXTURES**  
for Dry Lands, Wet Lands, Pasture and Hay Crops, Cover Crops for Orchards.

**NEW CROP—HIGH TEST**  
Samples and Prices on Request.  
Ask for Catalog No. 50.

**FARMOGERM** insures a stand—increases yield—builds up the soil.

### The Clipper

The only mill that cleans and grades all GRAINS, GRASSES, and VEGETABLE SEEDS. Its superior feature is the VERTICAL BLAST. Special Catalogue of HAND and POWER Mills on Request.



**Portland Seed Co.**  
Portland, Oregon



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## TRAPPERS

**BIG MONEY IN FURS**  
Learn how by reading our new book "Fur Facts." Write for it today. It's Free. Price List, Tags, etc., also Free.

**Abraham Fur Co.**  
29 Abraham Bldg., St. Louis, Mo.



Heves that every farmer should keep a small flock of sheep. They cost little for feed, for they act as weed scavengers, and grow into marketable products at an early age. Small flocks upon every irrigated farm will become more popular, for it is on such farms in the projects that maximum results may be obtained. There are also many waste places on farms which may be utilized for sheep production. Another advantage of sheep is that they require little labor. They come as near solving the "hired-help problem" as any other kind of mixed farming. Lambs milk the ewes at somewhat regular intervals, and they separate the milk and store away the product without the use of cans or refrigeration. When a farmer sees a bulge on his side of the market the kind-hearted and industrious lambs are asked to trot to market, carrying all the milk and worry with them. It is like finding money, for the sheep have paid their way in wool, fertilizer, and in the destruction of weeds.

The sheep problem on small farms in the Pacific Northwest requires some good wire fences and shelter. These provided the necessary feed can be raised by any intelligent farmer in a manner to realize a very fair measure of profit.

### FIELD NOTES ON MAKING DITCHES WITH EXPLOSIVES.

J. R. Mattern.

There seems to be great difference in the response of different soils to the action of explosives. In going over the figures and the record pictures, of a dozen or more ditches that had been blasted out, in different states, it was plain that no one rule could be laid down for all the cases.

Economical ditch blasting can be done only when the ground is wet. Yet if it is too wet, experience has shown that a successful ditch can not be made. For instance in muck swamps, where the material was semi-fluid, the explosives threw out enough material to leave a ditch, but the banks immediately moved in and closed up the cavity. Fortunately these conditions do not prevail at all over a large part of the country. Such ground is almost unknown in the north. Sandy soil offers another problem. When there is just enough water to bind the sand and what little loam and clay may be mixed with it, and not enough to make the sand soft, ditches can be blasted out very effectively and satisfactorily. You should see that the charges are placed shallow enough so that they do not tend to send their gases to useless depths in the softer subsoil. Do not try to blast ditches in dry sand, or, for that matter, in dry ground of any kind.

The most economical and satisfactory soils in which to blast ditches are the lighter clays, or heavy loams, such as prevail in many states. Here, whenever the ground is water soaked, or even fairly moist, the results of blasting are surprisingly good. One reason probably is that the substrata of earth nearly always are solid and gas resisting.

### CARE OF FARM DITCHES.

How about the firm irrigation and drain ditches? is the question propounded by D. O'Donnell in the Recla-

mation Record. No doubt the irrigation season just passed has found some faults in the layout, capacity, or efficiency of the ditches. Now is a good time to correct some of these faults.

It is likely that one of the most serious drawbacks has been the presence of weeds in the ditches, hindering the flow of water and causing it to overflow low banks. More than likely these same ditches are now a mass of ripened weeds, depositing their seeds for a still more lusty growth next season. Gather up these weeds, with as little scattering of seeds as possible, and burn them. Make the piles for burning on spots where most obnoxious weeds grow in order that their seeds will not be scattered and may be burned most effectively.

Go over the ditches and, as far as is practicable at this time, remedy the weak spots. Build up low banks so the dirt will settle well before next irrigation season. Put in new or replace old checks where needed; remove the silt from the bottom of ditches and use it to fill borrow pits or low places near by. Don't make the mistake of building the banks higher at points where the ditches collect silt; you are making future trouble if you do. Keep the ditches cleaned out to the proper grade.

The most important part of the irrigation work is done outside of the time you are actually irrigating. Removing obstacles to easy handling of water and having everything possible in full readiness makes for quicker, better, and cheaper irrigation. If you have a little time just before winter sets in, do some work on your ditches.

### ANNUAL WINTER SCHOOL.

State College of Washington.

The State College of Washington announces its annual Winter School for Farmers and Housekeepers, to be held at Pullman, January 2nd to February 9th, 1916. The following lines of work are offered:

1. Live Stock Farming.
2. Dairy Farming.
3. Creamery Work.
4. Poultry Raising.
5. Soil Management.
6. Crop Production.
7. Horticulture.
8. Home Economics.

Students are permitted to take work in more than one line if they so choose. In addition to these main lines instruction is offered in Farm Accounts, Accidents and Diseases of Farm Animals, Farm Insects, Country Roads, Gasoline Engines, Farm Management, Farm Machinery, Farm Forestry, Business Practices, Farm Sanitation, Farm Water Supply, Pumping for Irrigation, Farm Shop and Personal Health.

The school is open to anyone above the age of sixteen who can read and write intelligently. Students may attend for all or any part of the six weeks. Necessary expenses will include \$10.00 to \$15.00 for books and stationery, \$6.00 to \$7.50 per week for board and room, the usual incidental personal expenses and your carfare. The railroads have always granted 1 1/3 fare. There is no charge for tuition.

Write THE REGISTRAR, WASH-

INGTON STATE COLLEGE, Pullman Washington, for further information, stating the lines in which you are most interested.

### THE UNIVERSAL TRACTOR ATTACHMENT.

A New Invention for the Farmer.

According to an announcement made by the Gerlinger Motor Car Company of Tacoma, this firm is placing upon the market an invention which will rival anything announced in recent years in the way of a farm tractor.

There has never been a demand, since the advent of the first successful automobile, which compares to the present interest in the subject of tractors. The main difficulty has been that those tractors which were strong enough and heavy enough to do the work on the large farms, were expensive machines to buy and expensive machines to maintain thereby being far beyond the reach of the ordinary farmer.

Realizing the presence of this growing demand the Gerlinger Motor Car Company has designed and patented an attachment which can be attached to any ordinary automobile in one or two hour's work and which converts it into a tractor with sufficient power to do all the work a light tractor can do.

In speaking of the possibilities of this new invention, Mr. Gerlinger who is president and manager of the Gerlinger Motor Car Company, said: "We are now ready to put our tractor attachment on the market. We have given it the most severe tests and experiments. It puts at the command of the smaller farm, in the field and on the road all the power of the Ford or other small reliable automobile, increased ten times, and still does not mar the car in any way nor destroy its usefulness as a pleasure vehicle. The small farm cannot profitably use a large tractor, but in these days a large majority of the farmers own a small automobile of some kind or type, and with the addition of our Universal Tractor Attachment, it becomes in an hour's time, not only a practical tractor, but one which will operate at a cost much lower than that of a horse or mule. By means of a large gear reduction it is equipped to plow, harrow or do other farm work with greater ease than three or four horses.

In a brief way the main points in favor of the Gerlinger Universal Tractor attachment are as follows:

First—It will convert any small car into a tractor.

Second—It will pull anything on the farm which now is being pulled by three or four horses. It will pull a two-bottom plow, a loaded manure spreader, a four-section drag, a two-section spring-tooth harrow drill a binder or road drag.

Third—All this is accomplished without any mechanical change in the construction of the car itself; merely removing the wheels and the body and bolting fast the attachment.

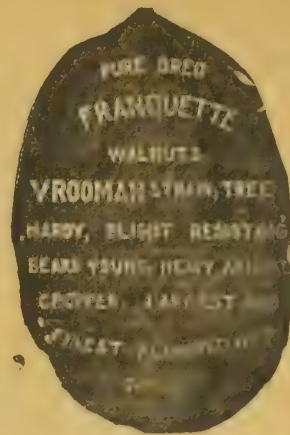
Fourth—Anyone, with a few simple tools, can attach the "Universal." A few instructions accompany each attachment.

Fifth—With a few hours' work it is possible to convert the machine back into a pleasure car.

Sixth—There is no extra strain on the mechanism of the car. All the hard work is taken care of by the tractor attachment itself.

Seventh—The car does not heat up any more than under ordinary road work. By a ten to one reduction the ordinary road speed of the car is brought down to normal pulling speed for farm work, so that when the tractor attachment is pulling a plow or work of that character, its engine is running at a road speed of approximately eighteen miles per hour. A water-pump is furnished as standard equipment to guarantee complete circulation.

Eighth—By means of a two-bottom plow, from five to six acres can be plowed per day.



### THE VROOMAN FRANQUETTE

This is a distinct type of nut produced in the celebrated Vrooman orchard at Santa Rosa, Calif. It is large, oval, thin shelled, full meat and perfectly sealed, retaining its rich flavor indefinitely, commanding a higher price than any other nut. The trees, young and old, withstand temperatures of 20° below zero. They bloom late, thus escaping late frosts which frequently kill the crops on most other varieties. They are self-pollenizing, which means that an isolated tree will produce nuts while many other varieties must be cross-fertilized. The above three prime requisites are combined in no other variety.

The walnut industry is assuming larger proportions every year. Our profitable nut sections are limited and over-production is out of the question. In the rich mild irrigated sections of the Northwest the walnut bears as early and as profitably as the most favored fruit, besides which there is practically no expense for upkeep and but little harvesting expense and no waste, as it is not a perishable product and can be gathered, held and marketed at the convenience of the grower.

We are propagating and selling the Vrooman Franquette under license from the Oregon Nursery Co., of Orenco, Ore., which holds an exclusive contract from the Vreeman orchard people at Santa Rosa, California.

Write us for special walnut information, giving us particulars as to the elevation, soil and climatic conditions in your locality.

Pears, Prunes, Plums, Cherries, Apples, Apricots and all other staple fruits, large and small, besides Ornamental trees, Shrubbery, Vines, Roses, etc. Leave your name and address, and tell us your probable needs.

### Washington Nursery Co.

Toppenish, Wash.

Nursery on the clean, new soil of the Yakima Reservation. No bugs or tree diseases.



Ninth—The Tractor Attachment is practically indestructible, being constructed of structural steel and steel castings throughout.

Tenth—In case of an accident, practically the only part necessary to replace would be either of pinion gears of the internal gear. These sections can be replaced at a very small cost.

Eleventh—This tractor will work in sand or mud where a heavy tractor would be helpless. This is due to large traction footing and relatively light weight.

Twelfth—It has unusual hill-climbing ability. When you figure that the power of the car has been multiplied ten times, you realize what its possibility on hills really is.

Thirteenth—The entire attachment would weigh approximately seven hundred pounds.

Fourteenth—The price f. o. b. Tacoma, will be only \$275.00, thus placing it within easy reach of any man who has need for such a machine.

These machines are made from material manufactured exclusively in Tacoma and if the present indications are any criterion by which to judge the future, it will only be a short time until additions will have to be built to the factory.

On November 4th a demonstration was made with this Universal Tractor attachment on the Richmore Farm about twelve miles south of Tacoma in the presence of a considerable number of visitors from different parts of Washington, Oregon and Idaho.

The tractor was first attached to a plow and performed pulling service smoothly with sufficient power for double the load and the plowing trial was finished without a drawback of any kind. The next demonstration was the pulling of a disc over soft ground, which was likewise performed without any difficulty. The tractor was then hitched to a double wagon load pulling a load of manure which was hauled through the field as easily as if the entire load had been that of an empty wagon. The last demonstration was hauling a manure spreader loaded and spreading over a plowed field. It is customary to use three horses for a load of this kind, but the Universal Tractor performed the duties here as quickly and as well as in the former trials.

It was the consensus of opinion of those present that this invention marks a new era for hauling and field duties for the small farmer and for services on roads where loads are to be moved from one place to another. One party present from Idaho expressed a desire to arrange for the sale of these implements in Southern Idaho.

The invention embodies the feature of simplicity, durability and economy. Some farmers will use their low priced motor cars, both for pleasure purposes and for this tractor attachment; while other farmers will buy a second-hand low priced car to which this tractor can be attached for permanent use.

E. E. Gerlinger, president and general manager of the company, is the inventor.

A considerable number of our readers are in condition to own a good car, or a serviceable pleasure car and a low priced car for tractor attachment, rather than to keep a large number of horses.

There is no question but this invention will decrease the number of horses required on the farms in the Pacific Northwest in the next few years and become the means whereby the road and farm operations will be performed by gasoline instead of horse power at a lower cost. The invention is indeed a boon to the small farmer.

The Gerlinger Motor Car Company began operations in Tacoma 6 months ago. First engaging in the manufacture of heavy trucks for use both in cities and in the country districts to haul milk. Their business was a success from the start. Orders coming in as fast as the auto trucks

could be turned out and at the present time they have orders ahead for a considerable number.

The firm is now enlarging its plant by the purchase of property adjacent to its present site and will arrange suitable buildings for the increased business of manufacturing both truck and farm tractor attachments.

#### CLEARING WITH DYNAMITE.

Mr. Surt P. Weise, of Carrollton Wash., wishing to clear a piece of stump land early in March, purchased some Red Cross low freezing dynamite. There were 40 stumps ranging in size from 1½ to 3 feet in diameter, and the entire expense was \$40, which Mr. Weise figures was less than half what it would have cost to remove by any other method.

#### MANURE AND SPREADER.

From \$10 to \$15 worth of manure per dairy cow accumulates during the six months of the dormant season, and much of it is wasted unless the liquid is also conserved. The average farmer has plenty of straw and other waste that could be used as absorbents and take up the greater portion of the liquids, and thus get their full value.

Every good farmer has (or should have) a manure spreader; and when he cleans out his stable he can just as well throw the manure into the spreader as out into the open yard; and when he has a load, he can hitch up and take it out to the field and spread on the pasture or meadow. This applies to the manure of cows as well as of horses; and there is no reason why, except in the most severe weather, the daily yield of manure should not be out on the meadow or pasture within 24 hours. Under these conditions the waste is merely nominal.

#### IDEAL COMMUNITY SPIRIT.

A writer in Breeder's Gazette pictures the ideal community spirit by an example known to exist and of which several might be found in the Pacific Northwest. In the locality to which reference is made the soil is not especially rich; nor has it ever been especially rich, but it is carefully tilled, so that crops are renumeratively large. Cattle are kept and fed, manures are used, grasses are sown, and the soil has yearly fertilization and occasional limings. All these things can be found elsewhere, but the thing especially notable in this community is the spirit of the people. Ask one farmer of another and he will likely reply: "James Brown? Oh, of an excellent family and a very fine man. He is well worth knowing, and his farm worth going to see." There seems no jealousy or petty spite in this community; the people are friendly and sociable; they love to assemble at each other's home and converse, or stroll over the fields to see the land, the crops, and the cattle. "I have reckoned up and there are more than 50 families of fine people in this neighborhood" said one of these men to us one day.

There is rivalry to see who shall grow the finest ears of corn, the biggest crops of wheat, make the best gains on a lot of grazing steers, or who shall have the loveliest lawn, the finest flowers, or the best horses; yet it is all a friendly rivalry, and these people admire one another's things and speak well of them. They

## Get a Bowsher Feed Mill on Your Farm

Here's the feed mill that caused more talk at the Oregon State Fair in Salem this year than any machine on the grounds. The Bowsher will cut your feed bills a big 25% at the same time it improves the quality of the feed.

Write Today for Illustrated Booklet

and prices. We have a size that is right at a price you can afford. Fully guaranteed to every user. The booklet gives all particulars

**REWADE & CO.**  
SINCE 1865  
PORTLAND, ORE.—SPOKANE, WA.



## Milton Nursery Co.

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. We can fill orders promptly for these. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request.

**Milton Nursery Company, Inc.**

Milton, Oregon

### Strawberry Plants

Carefully selected plants for both commercial and domestic use. Varieties and price list furnished on request. Address,

**A. R. Bagley**  
Canby, - - - Oregon

### Everbearing Strawberry Plants

Superb variety, will bear continuously, both spring and fall, of large sweet red berries, very solid and productive. We are still shipping berries. Send for descriptive circular.

W. B. SIMS, Newberg, Ore.

### FOR SALE OR RENT

A 360-acre stock ranch with buildings and dairy equipment complete. A lake and flowing well on the place. Write for particulars.

**H. S. ROYCE**  
Eatonville, Wash.

### Branwine Rhubarb

Send for price list for plants and terms under which we contract to take crop for shipping and preserving.

SALE OF YOUR CROP  
GUARANTEED

Under our system this crop becomes a big money maker. \$1865 was taken from 3½ acres one season.

**Wesco Seed Co.**

73 Madison St., SEATTLE, WASH.

### Rhododendrons

WASHINGTON STATE FLOWER

Collected from the Forest. Plants 5 to 10 inches, sent in lots of 10 or 100 plants, postpaid. Transplants also sent postpaid. Madronas, Huckleberries, Spireas, Berries and other wild fruits, plants and flowers at same prices, or collected and potted or transplanted for spring delivery. Write for price list.

**JOEL SHOMAKER,**  
**Olympic Nature Nursery**  
Nellita, Washington

## WALNUTS

## Loganberries

These two crops are making more money than anything else for the grower. Planting is being very extensively done in the Pacific Northwest. A steady and certain demand insures you splendid returns from your land.

We can supply you with guaranteed stock, and which should be planted for heaviest returns. Catalogue and prices on application.

**SALEM NURSERY COMPANY**  
SALEM OREGON

We offer an excellent opportunity to the live, energetic salesman.

## Small Fruit Plants

## at Wholesale Prices

|              |            |
|--------------|------------|
| Blackberries | Dewberries |
| Raspberries  | Currants   |
| Loganberries | Grapes     |
| Strawberries | Rhubarb    |
| Gooseberries | Asparagus  |

Write for Price List.

## F. H. Burglehaus

SUMNER, WASH.

### WHEAT-VETCH SEEDING.

We are prepared to furnish seed for planting, that has been grown on Whidby Island, a very superior variety of spring vetch and winter wheat that yielded this year ninety bushels per acre, with very stiff straw. We will furnish this already mixed in the right proportions. It has been thoroughly reseeded and contains no noxious weeds. The supply is limited, therefore send in orders at once.—C. J. ZINTHEO, Central Bldg., Seattle, Wash.

### GIANT MARROW CABBAGE.

The great feed for dairy cattle and other live stock. The greatest tonnage yield per acre of any plants of this class. Single plants have grown over 5 feet tall with leaves bracing thickly in length of 2 to 3 feet. Thoroughly relished and nutritious. Choice seed for sale. Write for further particulars and prices.—E. E. MARTIN, Bangor, Wash.



send their young people away to good schools, from which they return, part of them, to enrich the countryside. These people are not wealthy, as dollars count for riches, yet they have all the real wealth of the world in cattle, fertile fields, homes, and friends.

### STATE AID TO AGRICULTURAL SETTLERS.

Showing Rural Development Methods in Australia and New Zealand.

By Prof. Herman A. Brauer, University of Washington.

(Synopsis of address before the Logged-off Land Conference, held at the University of Washington, October 10 1916.)

The various governing bodies of those countries, in matters of public finance, and especially in the borrowing and lending of public funds, are under no such restraints as those apparently imposed by Article VIII. of our state constitution, which expressly and emphatically forbids the giving or lending of the credit of the state, in any manner, to or in aid of any individual, association, company or corporation; and similarly forbids the giving or lending of the money or credit of any county, city, town or other municipal corporation.

#### Sound Business Methods.

Practically the only restrictions imposed by the various statutes under which the Australian governments operate in dealing with the borrowing or lending of public moneys are the limitations and cautions to be observed in every sound and well conducted business enterprise, viz.: Is the transaction safe, and is it profitable? Our captains of industry have no particular horror of working with borrowed money. That is what most of them do every day of the week. Similarly, the Australians consider it good business to authorize their national government to borrow money for the purpose of making loans to counties, cities, towns, improvement districts and other public bodies, when thereby public improvements of all kinds can be made at less cost to the tax payers.

#### Means Lower Taxes.

We all know that a considerable item in the tax rate represents what might be called the "cost of money;" in other words interest on public debts. That cost is obviously reduced, and consequently the tax rate lowered, in proportion as the national government can borrow more cheaply than a state, county, city or a smaller community. At any rate, a policy which enables the smaller public bodies to take advantage of the wider credit of the state and nation has great possibilities, and is certain to be carried much farther in Australia than has yet been done.

As regards this country, and our own state in particular, we all know there is widespread dissatisfaction on account of the rising cost of government, and it may be that our yearly increasing tax rate, despite all protests, will sooner or later lead us or drive us to a similar policy in raising money for public improvements, the need of which, like the poor, will always be with us. It would seem that here is a wide and fertile field for our statesmen to explore and exploit.

In Seattle, at the present time,

about 12 per cent of the taxes go for payment of interest on the bonded debt, yet Seattle and other first class cities can borrow on much better terms than the smaller towns and local bodies all over the state. What a difference it would make in our smaller cities if they could get money for needed public improvements at a rate of interest only a fraction higher than it would cost the state to borrow the money especially if backed by the national government.

In New Zealand, just before the war, the rate of interest at which loans were granted by the state to small local bodies was  $4\frac{1}{2}$  per cent per annum, or  $\frac{1}{8}$  per cent more than the rate at which the state could borrow the money (whichever charge happened to be the greater). They even permit two or more local authorities to unite and raise an aggregate amount for several works, the loans being repaid, principal and interest, in  $36\frac{1}{2}$  years.

But not only are the governments of those countries permitted to supply cheap money to the smaller tax levying public bodies, they are authorized likewise, and for similar reasons, to lend money outright to workers and agricultural settlers.

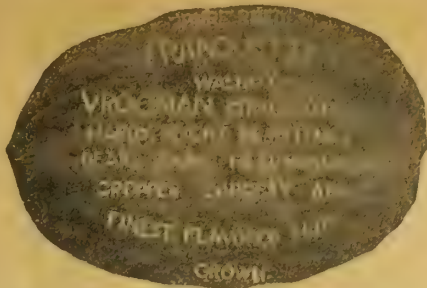
#### State Lends Credit and Cash.

For the purpose of promoting agricultural development, and with the object of assisting settlers in erecting buildings and making improvements on their holdings, general systems have been established in all the Australasian states under which financial aid is given to the settlers by the various state governments. Entirely new principles of agrarian legislation have been embodied in the various acts, which offer bona fide settlers special inducements by the introduction of new forms of land tenure on easy terms and conditions.

Not only does the state lend its credit and cash to agricultural settlers, but it helps them to acquire land in the first instance. For this purpose all the Australian states have enacted legislation authorizing the government to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special acts have been passed in several of the states authorizing the establishment of cooperative communities, village settlements and labor colonies. In two-thirds of the states the government may acquire agricultural lands compulsorily as well as by voluntary sale in the ordinary course.

#### States Buy and Sell Land.

The total area acquired by the Australian state governments for closer settlement purposes up to 1914 was 3,056,957 acres, at a cost of about \$55,250,000. In the State of Victoria, most nearly corresponding to Washington in population and area, the total acquired by the government for this purpose to June, 1914, was 567,687 acres, at a total cost of over \$21,000,000. This land is sold to settlers on  $31\frac{1}{2}$  years' terms, with  $4\frac{1}{2}$  per cent interest on deferred payments. The settlers by paying an additional  $1\frac{1}{2}$  per cent, or six per cent in all, for  $31\frac{1}{2}$  years, pay off both principal and interest. To help the settler of small capital, the State will build him a house and give 15 to 20 years to pay for it, and will prepare part of his land for ir-



There are several types of Franquette Walnuts of which the Vrooman Franquette is recognized by walnut experts of California and the Northwest as superior to all others in hardness, bearing qualities, size, flavor, color of meat and market value. This type was introduced into America by Mrs. Emily Vrooman of Santa Rosa, Cal., whose orchard now contains 60 acres of this one type. The Oregon Nursery Co. early recognized the superior merits of this nut and secured an exclusive contract with Mrs. Vrooman for the scions, buds and nuts from her orchard for propagating purposes. We are therefore the introducers and propagators of the only genuine Vrooman Franquette.

Send for literature on Walnut Culture and mention this paper.

## OREGON NURSERY CO.

ORENCO, OREGON

## TREES

Walnuts Adaptable Kinds  
Fruits, Complete List  
Choice Shade Trees

Our Ash, Elms, Norway and Sugar Maples, are in fine shape for transplanting. In ornamental shrubbery we can supply Syringas, Hydrangeas, Snowballs, Spireas, Dogwoods and a very choice list of Roses.

We can fill the orders of fruit growers in every line for tree planting, including the ornamentation of the home yards. Send for our list. Salesmen wanted.

YAKIMA & COLUMBIA RIVER NURSERY CO.,  
North Yakima, Wash.

## Winter Cropping

In the Coast Section there is more early fall sowing this year than usual of Vetch-Wheat combination, clovers, and other grass seed to produce the bumper yields for next year. Orders should be placed at once for the required seeds. Our stock is clean, of highest germinating quality and we ship promptly. Send for our catalog, from which to select for complete seeding and farm machinery equipment.

## Pooles Seed & Implement Co.

1507 Pacific Ave.

Tacoma, Wash.



### Canadian Farmers Profit From Wheat

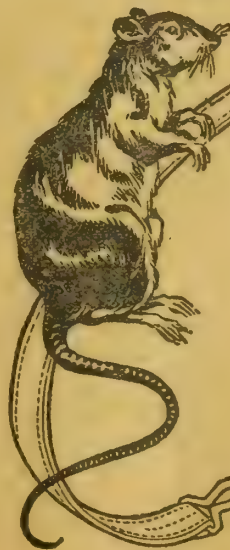
The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat near \$2 a bushel offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

You can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

J. M. GRIEVE, Spokane, Wash. -  
Corner 1st & Post Sts. Canadian Gov't Agt.



He won't  
touch it

This fellow will leave your harness strictly alone if it's oiled with Eureka Harness Oil—no animal oils in Eureka, and he hates it.

## EUREKA Harness Oil

Keeps new harness young—makes old harness like new. It pays to use it. Ask your dealer today.

Standard Oil Company  
(California)



rigation and allow payments to be extended over 10 years. The state also loans to settlers equal to 60 per cent of the value of permanent improvements, these loans to be repaid in 20 years. Five per cent interest is charged on all advance, whether for houses, preparing land, or money furnished the settler.

#### State Loans Increasing.

Naturally, these loans to farmers have increased year by year, as shown by the following totals:

In 1910 the total amount loaned to farmers by the governments of the six Australian states was in nearest round number \$35,500,000; in 1911, over \$40,000,000; in 1912 nearly \$47,000,000; in 1913, over \$56,000,000, and in 1914, the latest year for which complete statistics are available, over \$68,000,000. This is over \$13.00 per head of their population. On the same per capita basis in the State of Washington, it would mean a total of state loans to farmers of about \$18,500,000.

In the State of West Australia, with less than one-fourth the population of Washington, the State Agricultural Bank advances over \$12,500,000 annually to agricultural settlers. In New Zealand, the total amount advanced to settlers to March 31, 1915, (including moneys repaid and again advanced) was nearly \$78,000,000. On the same per capita basis in this state (since our population is about half as large again as that of New Zealand) this would mean a total of state loans to agricultural settlers amounting to \$117,000,000.

#### State Makes Two Profits.

That sounds big, and perhaps seems risky. Let us look therefore at the financial results. How has this policy of state loans to agricultural settlers worked out for the government, How much have the Australasian governments lost to be made up out of general taxes? Not one penny. On the contrary, they have made considerable profit, which for the last five years averaged about \$155,000 annually, whilst the accumulated profits from the beginning to 1914 have exceeded \$1,500,000. In the State of Victoria alone, whose population is about the same as that of Washington, the profit to the government for the year 1914 was \$45,000 and the cost of management \$53,105, or about 12 cents per \$100 on the capital employed. The net profits to the government for that year amounted to \$287,170.

But that is only the direct profit to the state on these transactions. Manifestly, when idle lands are made productive, there is an indirect profit that is many times greater, not only to the government, but to every trade, business and profession in the country. Far from losing money, therefore, the state profits in a variety of ways, directly and indirectly.

#### Copies of Statutes Available.

This is not the place for a detailed description of the statutes concerned, nor of the administrative machinery involved in the process. The procedure is similar in all the states, and perhaps the most typical statute is the New Zealand States Advances Act of 1913, which authorizes the borrowing of money by the state for the purpose of lending to settlers, workers and local authorities. All the Acts may be consulted at any time in my office, also the

statistical records showing details of operation of the system to date. Suffice it to say that the Acts are most carefully drawn, and provide safeguards designed to cover every contingency so as to secure the state against financial loss from any source.

#### Other Factors Involved.

Thus far I have spoken only of the financial results of this plan which are wholly good. The farmer gets cheap money, and the state loses nothing, but gains in wealth, population and taxes. Both parties to the transaction are satisfied and everybody is happy. But that is not the whole story, and I feel that before closing I ought to call the attention of this conference to what I consider to be the really effective factors in those far-away countries of converting idle lands into productive farms. In fact, I question if the policy of financial state aid alone would solve the problem of our logged-off lands. Speaking from personal observation made in different parts of Australia and New Zealand (which I know from one end to the other, because I have lived there most of my life) I undertake to say that the really effective factors in bringing their idle lands into more productive use have no necessary connection at all with state money lending.

First and foremost as an effective means of promoting more intensive agriculture in those countries is the progressive land tax, as they call it, levied on unimproved values. This makes it unprofitable to hold large areas of land out of use, and supplies a powerful inducement to large land owners either to work their lands, or else sell them or rent them to others able and willing to do so. Then there are the various chemical and mechanical inventions, and improved marketing facilities and methods, which have made land cultivation more profitable, and incidentally the lands more valuable. Merely to name these will carry conviction to anyone who gives a little thought to these questions.

The following are among the more important inventions referred to:

Modern refrigerating methods, with cold storage and cheap ocean freights, enabling producers in Australia and New Zealand to ship even perishable produce all around the earth, thus substituting dependable work markets for the previous irregular local demand; super-phosphates and other modern fertilizers, making land more productive; modern agricultural machinery, like the "seed drill" and "stripper-harvester" reducing the cost of seeding and harvesting operations; modern transportation facilities on land as well as by sea, and standardization of produce, insuring larger returns to producers. In a word, every invention of whatever kind which increases the farmer's revenue or cuts down expenses has had its share in the process of converting idle lands into productive farms. And all these factors were simply reinforced by financial state aid, enabling men without means, but able and willing to work, to make a success on the land.

In a word, the progressive unimproved land values tax made it unprofitable to hold large areas of land out of use, and all the other factors combined made it profitable to put them to use.



## Christopher Nurseries

Select your roses and ornamental plants from choice acclimated stock which satisfies. Send for our catalog at once for information about new choice varieties of deciduous and evergreen plants and description list of fruit trees of all kinds. Nurserymen for four generations. Satisfaction assured.

JOHN A. STEWART & SON,  
Christopher, Wash.



## (BLASTING Made my trees grow twice as fast

Three-year cherry trees, same size when planted, in orchard of Herman H. Smidt, R3, Oregon City, Ore. That at left in soil blasted with Eureka Stumping Powder; that at right in dug hole. Illustrations reproduced from photographs taken February 14, 1916.

"The trees that I planted in blasted ground show a growth of 75 to 100 per cent. over the trees that were planted in ground not blasted," says Mr. Smidt. "They also appear healthier and more satisfactory in every way. I have just bought 1,100 more prune trees and would not think of planting them without preparing the ground with

## GIANT FARM POWDERS

STUMPING — AGRICULTURAL

Hundreds of fruit growers have found, like Mr. Smidt, that the Giant Farm Powders—Eureka Stumping or Giant Stumping—are the proper explosives to use in tree planting. They pulverize the soil for several feet in every direction, instead of caking and packing or throwing it high in the air.

Be sure your dealer supplies you with the genuine Giant Powders and blasting supplies, made especially for Pacific Coast conditions. If you do not know where to get them, we will see that you are supplied.

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## BOXES

## For Fruit Growers and for Creameries

All kinds, Quality A1, Prompt Shipments

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## Prune Trees Thousands

Grafted Walnuts. Trees of all kinds. Buy direct—save 50 per cent. (No Agents.) Our prices sell. Write for Planter's Catalog and Price List. Twenty-six years in business.

Carlton Nursey Co.

Carlton, Oregon



**PAPER FROM CHIPS.**

As the result of studies which have been made at the Forest Products Laboratory on methods of handling chips suitable for paper pulp, it is announced that Wisconsin paper companies are now negotiating with the railroads for shipment to their factories of experimental train loads of chips of western woods adapted to paper making.

Previous investigations by the Forest Service have demonstrated that good grades of paper can be made from a number of western woods. The experts now estimate that some of these woods, when cut into chips and dried and baled, can be delivered to the mills at a very small advance over the cost of chips made from local timber.

**TRAPPING MOLES.**

By Theo H. Schaffer, Assistant U. S. Biological Survey.

To insure success with the jaw trap, a type of which is illustrated herewith, the soil in which the setting is made must first be loosened up with a spade or trowel, and be free from sticks and large pebbles. Otherwise, when the trap is sprung the grasping mechanism will close but slowly if at all. It is well to proceed about as follows: Make the excavation only large enough to take in the trap and a little deeper than the level of the bottom of the runway. Definitely locate the course of

**WESTERN AUTO OIL.**

It is reported that one of the biggest auto stage companies on the Coast, operating lines over various parts of the central and southern sections of the State of California, has finally decided to hereafter use only western lubricating oil made from California asphalt-base crude

The decision comes, it is said, after many and varied experiences with different oils. The company's practical road tests proved the western oil to be not only the most efficient lubricant, but also the one to leave the least carbon.

This company, the report states, operates about 80 automobiles in all, including Packard twin sixes, Cadillac eights, Whites and other high grade cars.

method of setting this trap is shown in one of the illustrations. It may also be set by hand if one has a strong grasp.

Less attention to detail is required in setting the choker-loop trap. The loop may be forced into the soil, however, firmly, with the certainty that they will react quickly when the trap is sprung. This type of trap will also stand up to the work better than the other when used in heavy clay or gravelly soils. When placed in position in the excavation prepared for it, the loops should encircle the course of the runway and be a little lower at the bottom than the tunnel itself. Enough loose earth



the latter and then having filled in enough loose earth to hide and obstruct it, settle the trap snugly in place, the jaws straddling the course of the tunnel. Tap the trigger pan down with the end of the trowel handle and, lastly, release the safety hook that holds together the bows of the trap. Do not pack the earth in the excavation nor cover the trap deeper than the top of the jaws. A

must be filled in again to come up against the frame of the trap. This had better be done before placing the latter. Pack the dirt beneath the trigger pan only, or place a little piece of sod under it so that the two will be in snug contact when the trap is set. Hold the end of the trigger wire down with the left thumb while getting the trap into position.

**CO-OPERATIVE STORES.**

Efficient Methods and Education Required.

While co-operative stores in the United States are relatively unsuccessful as compared with typical co-

operative stores in European countries the lack of success is not due to the failure of the underlying principles of such enterprises to hold good in America, but to the business methods generally followed in such undertakings in this country. This

**GROUND LIMESTONE**

The WASHINGTON PORTLAND CEMENT COMPANY and the SUPERIOR PORTLAND CEMENT COMPANY, both with plants at Concrete, Skagit County, Washington, are the greatest producers of GROUND LIMESTONE on the Pacific Coast. Their products are superior, being ground 100 mesh fine, 90% Calcium Carbonate. For prices per ton and in carload lots of not less than 25 tons, write either firm.

WASHINGTON PORTLAND  
CEMENT CO.,  
809 White Bldg.,  
Seattle, Wash.

SUPERIOR PORTLAND  
CEMENT CO.,  
Northern Bank Bldg.,  
Seattle, Wash.

**ITALIAN PRUNE TREES**

15,000, 7 to 9 feet; 8,000, 5 to 7 feet, 3,000, 3 to 5 feet. First class stock in every respect. For prices address

MILWAUKEE, NURSERY  
MILWAUKEE, OREGON

**PORTLAND WHOLESALE  
NURSERY COMPANY**

Rooms 6 and 7, 122½ Grand Ave.  
PORTLAND, OREGON

Wholesalers of Nursery Stock and Nursery Supplies.

A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

**SPECIALTIES**

Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.  
Write now.

**MONTE VISTA NURSERIES**

APPLE TREES—Gravensteins, very choice; also other varieties. Good assortment of Cherry, Pear and general nursery stock. Write for our list.

A. HOLADAY SAPPOOSE, OREGON

**The Puyallup Nursery**

A. Lingham, Prop.  
702 Pioneer Ave. E., PUYALLUP, WASH.

Hardy Ornamental Trees and Shrubs a specialty.  
Specimen Evergreens, Rhododendrons, Azaleas, Hollies, Perennials, Roses, Bulbs, etc.  
Write for list.

**FRUIT AND POULTRY**

We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**  
We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature.  
Twenty years of satisfactory service to growers our best recommendation.  
923-5 Railroad Avenue, CHAS. UHLEN, Spokane, Wash.

**Milton Nursery Co.**

WALNUT TREES, SHADE and ORNAMENTAL TREES

of all classes and varieties. In deciduous fruit trees of all kinds our stock is complete and very choice. Catalog on request. Agents wanted. Attractive proposition to offer.

**Milton Nursery Company, Inc.**

MILTON, OREGON

**CATALOG AND GUIDE BOOK ON ORNAMENTAL  
PLANTING FREE**

Full of helpful suggestions to make your place beautiful,—It's up-to-date, instructive. Please mention this paper and write to,  
J. B. PILKINGTON, Nurseryman  
Portland, Ore.



conclusion has been reached as a result of a survey of 60 co-operative stores made by the Office of Markets and Rural Organization, U. S. Department of Agriculture, the findings of which are published in Bulletin 394, of the Department. In the many American co-operative stores which have failed, mismanagement, inadequate accounting and auditing, lack of co-operation, poor business methods, and lack of judgment are responsible.

The results of the survey indicated that the co-operative store has tended to bring about lower prices, smaller margins of profit, more efficient business methods, and other practices beneficial to the farmer. Higher figures are quoted frequently for produce sold by farmers, in communities in which co-operative stores exist because of a stimulation of the local market.

With the application of efficient business methods and the education of the farmer to a clear understanding of the functions of co-operative stores, say the authors of the bulletin, American co-operative stores may be made successful. Instances are cited of unusual savings and large dividends to members of various organizations. Such associations procure capable managers, it is pointed out, by paying adequate salaries; take advantage of large scale purchasing and cash discounts; maintain proper accounts and cost records; and watch stock turnovers. The co-operative store in general, it is pointed out has very great possibilities in this country if the farmer can be made to understand this necessary relation of efficiency to financial success.

#### Conditions Necessary for Success.

The more general, underlying conditions which investigations indicated should be present if a co-operative store is to be successful are: (1) good leadership among the members and prospective members; (2) capable management; (3) favorable environment, with regard both to physical location and to social or occupational affiliations, and (4) adequate legal safeguards. The leadership should not be confined to one individual, the severing of whose connection with the enterprise might prove disastrous, but should consist in an efficient organization in which a group of leaders takes part. Only a man of good general business ability should be placed in active management of the store. The securing of such a man will involve the payment of a higher salary than is paid by most of the stores investigated. The average salary of the manager for the enterprises reporting was \$106 a month.

#### MARQUIS WHEAT EXPERIMENTS.

The results of twenty-five experiments with Marquis Wheat in thirteen States, just published by the U. S. Department of Agriculture, show the yield from this wheat to be exceeded by that of some other variety in all tests but three. In two of these three experiments the cereal was grown without an artificial water supply and in one under irrigation.

Marquis, which is a spring wheat, was outyielded by some variety of hard red winter wheat, wherever the latter type could be grown. In the

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Everything needed in building, and you pay at the LOWEST net prices. We guarantee prompt shipments everywhere. Just a few Rovig prices follow:

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| 5-Cross Panel Doors .....         | \$1.25 |
| Front Doors (any style) rom ..... | 3.00   |
| Kitchen Doors, best grade .....   | 2.35   |
| Prepared Roofing, per roll .....  | 1.35   |
| Window Frames, best grade .....   | 1.00   |
| Porch Columns, each .....         | .45    |
| Plaster Board, per M eet .....    | 27.50  |

Send today for Complete Illustrated Catalogue. Mailed Free.

#### P. A. ROVIG COMPANY

2229 First Ave. So. Seattle, Wash.

**WANTED**—To hear from owner of good ranch for sale. State cash price and description.

D. F. BUSH, Minneapolis, Minn.

northern prairie region, including Iowa, Minnesota, and the eastern portions of the Dakotas, Marquis outyielded all other spring wheats. In only a few sections of this region is it impossible to grow the heavier-yielding winter wheats. In most of the other experiments conducted in the Northern Great Plains area and the western Basin and Coast areas the Marquis yielded approximately the same returns as the best yield of any other spring wheats. Considering all the experiments, Marquis was surpassed to a greater or less extent by other spring wheats in eighteen experiments, and led in seven.

Marquis wheat originated from plant-breeding experiments in Ottawa, Canada, and has shown best results in the Canadian Northwest. The experiments in growing the wheat in the United States are described in detail in a professional paper Bulletin No. 400, recently issued by the U. S. Department of Agriculture.

#### HANDLING MANURES.

Manure carriers running on overhead tracks in the barn have largely reduced the laborious work of removing manure from farm buildings, while the spreader has transferred the work of spreading from man to horse. No mechanical device, designed to load manure from the yard to the wagon or spreader, has yet found general adoption on farms. Farmers can eliminate the work of handling manure from barnyards by providing a low-wheeled, low-priced wagon into which the manure from the barn carrier can be emptied as it comes from the stable. The manure spreader can also be set outside, so as to receive the contents of the carrier. By hauling the loaded wagon or spreader to the field as soon as filled, there need be no accumulation of manure in the barnyard, the most laborious operation of loading from the ground by hand is eliminated, the manure is handled and lifted but once into the carrier, and goes directly to the field with a minimum of loss by leaching.

According to Bulletin 412, U. S. Department of Agriculture, the great majority of farmers find three horses necessary for the operation of a spreader. The advantage of the spreader is realized in more even distribution of manure over the field, in the shorter time required to unload, and in the greater ease of doing the unloading by horsepower than by man power. It takes about two and one-half times as long to unload by hand as with the spreader.

#### ORNAMENTAL PLANTS

of the very choicest selections at reasonable prices. Flowering shrubs, evergreens, roses and hardy perennials, well shaped stock. Submit your planting needs for design.

#### SANDVED NURSERY CO.

1803 39th St. No., (On Madison St. Car Line)

Seattle, Wash.

## Plant Pear, Walnut and Ornamental Trees

Large opportunities are in store for the horticulturists of the Pacific Coast. Many are planting nut trees and ornamental shrubbery, thus adding to the value and comfort of their farm homes. Others are preparing to dry their surplus apples and pears, and plant trees with definite purposes in view. We carry a very complete stock of select varieties in choice sizes.

Write for a copy of our catalog today and do not hesitate to confer with us about any particular plantings.

## QUAKER NURSERIES

Good Agents Wanted.

C. F. LANSING, Prop.

SALEM, OREGON

## HOUSE TO HOUSE CANVASSERS

OLD OR YOUNG, WANTED IN CITY OR COUNTRY to sell our hardy guaranteed fruit trees, berries, shade and ornamental trees, flowering shrubbery, roses, vines, etc. Best selling season for years.

Age or inexperience no handicap. Persistent house to house canvassing gets results.

The prestige of the Washington Nursery Company, largest in the State, thirteen years in business, 15 000 orders annually, is back of you.

Our field reaches from Montana to Southern California, and from New Mexico to Northern British Columbia.

Cash Weekly. Outfit Free.

Write today. If not interested perhaps you know some energetic, intelligent man now unemployed.

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# VETCHES

## New Crop of Seeds Now Ready

Write for prices also on all other Seed for Fall sowing.

Send for Catalogue of Grass Seeds, Trees, etc.—Full of Valuable

Information for North Pacific Farmers

# J. J. BUTZER

The Seed Man, 188 Front Street, Portland, Ore.

#### From Western Crude—

Western, Asphalt-base, crude makes the highest grade motor oil, not only in our opinion, but also in the opinion of unprejudiced experts and of increasing thousands of satisfied users.



## ZEROLENE

*the Standard Oil for Motor Cars*

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)

#### SUGAR FACTORY AT YAKIMA

The Utah-Idaho Sugar Company is erecting a sugar factory at North Yakima and in addition will construct a pulp dryer at a cost of over \$100,000, says the Yakima Republic. The dried beet pulp is a valuable feed, generally used in connection with alfalfa and is the means of

promoting the dairy industry very materially. Good sugar beets are being grown in the Yakima valley, yielding 25 to 30 tons per acre. There is now a rising market both for sugar and for the by-product of pulp, and the farmers of the Yakima valley, as well as the citizens of North Yakima, are very enthusiastic over the enterprise.



## DAIRY DEPARTMENT

Testing Dairy Cows for butter fat records of highest importance.  
Conserve Dairy Energy and figure on the Individual Cow.

### THE VALUE OF COW-TESTING ASSOCIATIONS.

O. E. Gibson, Dairy Field Agent, Puyallup, Washington.

A Farmers' Co-operative Cow Testing Association is, as the name signifies, an association organized for the purpose of keeping yearly production records of the individual cows belonging to members.

The advisability of weighing and testing each cow's milk during the year is made quite evident when we find good dairymen the country over discovering, through testing, that the entire profit being derived from their herds comes from a relatively small number of the animals kept. Strange as it may seem, animals which had been considered almost worthless as regards their milk and fat production have often been proved by testing to be profitable cows, and "the best cow in the herd" is many times relegated to the ranks of the "boarders." When it is taken into account that members of cow-testing associations are usually the most progressive farmers in a community and that their cows are somewhat better than the average, the above facts have a still greater significance. Keeping records of the production of a herd enables a dairyman to intelligently weed out his unprofitable cows. A Washington farmer, in a community where a cow-testing association had recently been organized, sold a neighbor a cow for \$75.00. After the association had been in operation some little time the previous owner paid \$150.00 for the privilege of again possessing the animal he thought had been well sold. Her record in the association proved her to be exactly what her owner had feared she was not—a profitable producer.

To the man who is attempting to develop a high-producing herd of much cows, testing associations have another significance. Each year a certain number of heifer calves are raised. When the cost of raising a

calf to the time she comes in milk is considered, it is quite evident that it is a losing proposition unless the young cows prove to be profitable producers. Nature intended the average cow to produce enough milk and butter-fat during a lactation period to give a healthy calf the proper start in life. In terms of butter-fat this means between 100 to 150 lbs. per year, which from a dairyman's standpoint is unprofitable production. If a dairyman is to succeed through the production of his animals he must make intelligent selection from his best producers. Only calves from cows which have proved themselves through testing—not by guess—to be profitable, should be raised. Ample proof of the wisdom of this method is furnished by comparing the records of herds when they first began testing and after testing had been carried on for a series of years. Cases are not infrequent where the average milk production of herds has been increased 50 to 75 per cent in from four to six years.

#### Why Good Sires.

We judge the dairy cow by her production and we judge the dairy bull by his ability to get heifers with greater milk and butter-fat producing qualities than their dams. Herein lies a third reason for keeping records of the production of the individuals in each herd. By keeping a pure-bred bull rather than a grade or scrub the chances of getting profitable cows are greatly increased, but all pure-bred bulls do not transmit milk and fat-producing qualities to the same degree, and since the value of a bull as well as his get is determined by productivity alone it becomes most necessary to keep production records of the producing members of the herd.

The keeping of records of dairy cows has a more profound influence upon profit and loss than any which can be measured at the scales or by the Babcock test. Charles M. Schwab, the head of the most powerful manu-

## GUERNSEYS

### Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.



Korndyke Beet's DeKol, 547.2 lbs. milk, 29.311 lbs. butter 7 days. Our own breeding.

### SKYKOMISH VALLEY HERD

#### Registered HOLSTEIN CATTLE

A few young bulls ready for service, with excellent ancestral records given on application. Also a few cows and bred heifers. Herd sires Sir Snow Fayne and Sir Korndyke Madrigal. Satisfaction guaranteed.

HERMAN STEFFEN  
MONROE, WASH.

### Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

A. E. SMITH CO., Sumas, Wash.  
(or White Building Seattle)

## Hope Farm Guernsey Calves

**FOR SALE**—Well marked, large Registered bull calves, from dams on official yearly test that will exceed 600 lbs. butter fat. May Rose and Glenwood families. The sire of our herd bull is from a cow with butter fat record of 505 lbs. and sired by a son of Glenwood Boy of Haddon, sire of 26 A. R. cows, from Selma of Pinehurst record 762.88 lbs. butter fat. His dam was first in her class at National Dairy Show and sired by Lord Mar, Grand Champion on the Island and at the National Dairy Show; also sire of 29 advanced registry cows.

H. B. DOUGLAS, Ferndale, Wash.

### A Rare Opportunity for High Producing Jerseys

I have decided to offer all of the calves that are born this year from my high producing Register of Merit cows, only excepting Olympia's Fern's offspring. Some of these cows are making over 800 lbs. butter, and others have already done so.

#### WHO IS OFFERING HEIFERS FROM 800-POUND COWS?

Look over the advertisements and then you will have to come here to find them.

E. L. Brewer

Satsop, Wash.

## Pure Bred Holstein Cattle

Our herd bull is Sir Korndyke Ormsby Piebe, whose grandsire Sir Pietertje Ormsby Mercedes is the sire of the world's record milk and butter cow, Queen Piebe Mercedes, which gave 20,145.4 lbs. milk and 1403.8 lbs. butter in one year.

The cows and bulls sold from our herd during the past years are all making splendid records. Those who wish youngsters of high productive quality and carefully raised stock will find satisfaction here.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

WILLIAM TODD & SONS  
NORTH WAKIMA, WASH.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

PACIFIC COLD STORAGE CO.  
N. P. Wharf, Tacoma, Wash.

## HIGH QUALITY FEEDS

Shorts, middlings, bran. Dairymen should get our prices now per ton or car lots. We also manufacture Hen and Chick Foods. All cereals.

Keystone Cereal Company

2311-17 Jefferson Ave.,

Tacoma, Wash.



Puyallup Valley Cow-Testing Association demonstration at the Western Washington Fair, Puyallup. The six cows exhibited numbered from the left produced butter-fat at a feed cost of 11½, 22, 31, 14½, 24½ and 13½ cents, respectively. All were of good dairy type but No. 3. This demonstration was one of the most interesting at the Fair. (Courtesy Western Washington Experiment Station.)



facturing concern in America, the Bethlehem Steel Corporation, has said "The greatest thrill that can come to any man is the thrill of successful accomplishment. Money for money's sake is a futile goal to aim at." Any plan or organization which gives to the business of farming an ideal, and a goal to strive for, lifts it from the ranks of drudgery and gives it the dignity of a calling. Testimony from hundreds of dairymen proves that cow-testing associations are doing this for the dairy farmer.

Fifteen Testing Associations in Washington.

The cow-testing association movement in the State of Washington is of comparatively recent origin. Since 1910 scattering attempts have been made here and there to carry on this work. About a year ago the State College of Washington, co-operating with the Dairy Division of the U. S. Department of Agriculture, undertook to give aid in organizing and carrying on cow-testing association work. The agricultural press, the extension workers and the State Department of Agriculture have all contributed splendidly to the support of the work, with the result that fifteen associations have been organized, having a total membership of over four hundred farmers owning and testing over eight thousand cows. The Extension Department of the State College of Washington keeps in close touch with the work being done in each association, and directs and encourages the movement in every way possible.

A cow-testing association to be most successful should be made up of 26 to 30 farmers owning from 500 to 600 cows. As the operating costs of the association amount to about \$800 per year, a charge of \$1.50 per cow per year is made in order to cover all expenses. Each member is furnished a Herd Record book, and all necessary blanks for use in the association are provided free of charge by the U. S. Department of Agriculture. The association elects its officers and directors from among its members, a testing outfit is provided, a tester is hired and the organization is ready to begin operations.

The tester visits each member one day each month; records the weights of the night's and morning's milk, and amounts and kinds of feed consumed by each cow in the herd. He tests the milk of each cow for butter-fat and records complete data concerning the same in the owner's Herd Record book. The owner is thus provided with a monthly statement showing the number of pounds of milk and butter-fat produced by each cow, the price received for either the milk or butter-fat sold, the kinds and amounts of feed consumed and cost of same, the profit or loss produced by each cow and the feed cost of 100 lbs. milk or 1 lb. butter-fat.

As to the accuracy of regular one-day tests compared with daily weighing of the milk, careful comparison on the part of those who have investigated has proved one-day-per-month tests to be 95 to 98 per cent correct.

The following is a list of the cow-testing associations in Western Washington:

| Name            | No. Cows | Members |
|-----------------|----------|---------|
| Enumclaw .....  | 497      | 34      |
| Montesano ..... | 595      | 30      |

|                        |       |     |
|------------------------|-------|-----|
| Duvall .....           | 580   | 27  |
| Chehalis .....         | 525   | 34  |
| Skagit Valley .....    | 614   | 25  |
| Puyallup .....         | 550   | 28  |
| Snohomish .....        | 588   | 27  |
| Thurston County .....  | 564   | 38  |
| Jefferson County ..... | 546   | 25  |
| Clallam County .....   | 500   | 24  |
| Arlington .....        | 575   | 22  |
| Stanwood .....         | 550   | 25  |
| Total .....            | 6,684 | 339 |

HOLLYWOOD HOLSTEIN SALE

The Hollywood sale of Registered Holsteins held as advertised October 21, was generally satisfactory, both to the buyers and to the Hollywood people. Mr. S. F. Stimson and his able manager, Mr. Peters, had every necessary detail from start to finish for a successful sale properly arranged beforehand. The cattle were all in the very best of condition, attractive in appearance and registration papers were ready, free of charge, for each purchaser as he left the grounds. At the opening of the sale Mr. Stimson briefly gave the reasons for selling surplus stock and told how he sought to obtain the best breeding, both as to type and production, to be found anywhere, as evidenced by his practical registered dairy herd. It is the plan to hold a sale on the Hollywood Farm annually. Geo. A. Gue, auctioneer, with his assistants, handled the sale in his usual pleasing and successful style.

Following are the names of animals sold and buyers at Hollywood Farm's First Annual Sale, date of birth given and the price paid:

Beachview Farm bought: Hollywood Pietertje Jewel, December 31, 1913, \$250; Hollywood Midnight Rayne, February 20, 1913, \$335; Hollywood Duchess Pietertje Fayne, October 13, 1912, \$200; Hollywood Gelschecola, January 17, 1912, \$305; Hollywood Spring Brook Hartog, February 12, 1914, \$565.

Geo. A. Gue, North Yakima, bought: Hollywood Pontiac Belle Fayne, May 23, 1913, \$280; Hollywood Lilith Leona, November 27, 1915, \$150.

E. B. Marks, North Yakima, bought: Hollywood Palmyra Inka, December 21, 1915, \$150; Hollywood Lilith Sita De Kol, June 23, 1915, \$190; Hollywood Howtje Fayne, December 12, 1913, \$295; Hollywood Johanna Bonheur, December 25, 1915, \$155; Hollywood Geneive Fayne 2nd, July 25, 1915, \$180; Hollywood Brookdale Fayne 2nd, July 26, 1915, \$250; Hollywood Bessie Palmer, February 24, 1915, \$255.

A. F. Stander, Snohomish, bought: Hollywood Spring Brook Zella, November 11, 1915, \$115; Hollywood Bessie Fayne, August 18, 1915, \$150; Hollywood Lorinda Fayne, December 10, 1913, \$160; Hollywood Duchess Netherland, April 8, 1914, \$165; Hollywood Myra Canary, June 2, 1914, \$350; Hollywood Lilith Elzevere, January 2, 1915, \$270.

A. Wheeler, Snohomish, bought: Hollywood Bernardo Fayne, January 17, 1913, \$230; Hollywood Geneive Fayne, March 14, 1913, \$280; Hollywood Pontiac, March 24, 1913, \$245; Hollywood Lilith Boon, January 1, 1916, \$265.

Carnation Stock Farm, Tolt, bought: Hollywood Lilith Shadeland De Kol, December 6, 1914, \$215; Hollywood Bessie De Kol Fayne, January 31, 1916, \$210; Hollywood Cora Segis rayne, October 29, 1912, \$295; Holly-

AYRSHIRES

Three splendid young bulls, grandsons of Peter Pan, one a son of King Marcus. Their dams are heavy producers. Beautifully marked. For prices write

F. I. MEAD

524 California Bldg., Tacoma, Wn.

HOLSTEINS

Mr. Dairyman, do you want a choice young bull to grade up your herd? We have a fine lot of youngsters from A. R. O. dams, at very reasonable prices. Send postal today for pedigrees and prices. Satisfaction guaranteed.

CLOVERIDGE FARM,  
Seghers, Oregon. W. K. Newell.

JerseyBulls for Sale

Two very choice yearlings sired by a son of Merry Maiden and out of Brown Bessie on dam's side. Also two bull calves sired by son of Eminent 24th. Their dam is Sensational Fern. High records back on both sides. These bulls are an exceedingly good investment for dairymen.

Write for further particulars. Health assured.

EDWIN PETTETT  
Dungeness, Wash.



Purebred Registered  
HOLSTEIN CATTLE.  
Send for free illustrated booklets. The Holstein-Friesian Assn. of America, Box 284 Brattleboro, Vt.

SHEEP FOR SALE

Shropshire and Oxford rams. 150 head of Shropshire rams, 30 head of Oxford rams, from the best of imported blood and show rams. Order now and be sure of rams at breeding time.

EARL WOOD  
Silverton, Oregon

FARM PROPERTIES

Let us know your wants in farm property. We may have something that will please you. Those who desire to sell please give description and full particulars. DANIEL McCREGOR, Berlin Bldg., Tacoma, Wash. Established over 30 years

HILLCREST FARM GUERNSEYS

Herd gull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat; his five closest female kin have A. R. records that average 625 lbs. fat. At present offer one yearling bull reasonably priced. Also 17 grade Guernsey heifers.

C. G. HENKEL, Opportunity, Wash.

YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W 10 REIERSON MACHINERY CO., Manfrs., Portland, Ore.

AUCTIONEER

Thoroughly experienced in conducting sales and wide acquaintance among sellers and buyers in the Pacific Northwest. Write for date and plan.

GEO. A. GUN

North Yakima. Wash.

Solid Fawn Jersey Bull Calf

Born Dec. 23rd, 1915. Dam imported and in Register of Merit with record of 9486 lbs. milk, 598 lbs. butter; full sister with record of 425 lbs. butter and another heifer by same sire now making above 50 lbs. fat per month with first calf. This calf is a good one.

David C. Dilworth Buckeye, Wash.

Holstein Bulls, World Records

The dam of my herd bull is Lutscke Vale Cornucopia, the world record milk cow. Young bulls for sale from this breeding.

E. W. McGEARY,  
Friday Harbor, Wash.

GUERNSEY BULL FOR SALE

My young herd bull, son of Imported Galaxy Sequel and Advanced Registry cow Gulnar 20th, is offered and should go to some good pure bred Guernsey herd. He is outstanding in show type and has highest producing records back on both sides. He is in excellent condition, 3 years next August and health guaranteed. For prices and further particulars write

M. S. Shirley, Proprietor  
PLATEAU FARM,  
Haller Bldg. Seattle, Wash.

MERIDIAN DAIRY FARM

Several choice registered Jersey bull calves for sale. My herd bull is Kollander's Eminent, whose dam is Veda Kollander, produced 15,243 pounds milk and 896 pounds butter in 13 months. Write for prices.

B. C. CRABTREE, Prop.  
R. F. D. 1 Lynden, Wash.

**BLACK LEG** LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.  
10-dose pkg. Blackleg Pills, \$1.00  
50-dose pkg. Blackleg Pills, \$4.00

Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct. The Cutter Laboratory, Berkeley, California

Milk Record Sheets

Progressive dairymen are now weighing the milk and keeping a record of each individual cow in the herd, which is necessary to determine the amount of profit realized. This method is the only sure guide for successful and satisfactory results in dairying. Only a moments time is required at each milking. We offer record sheets for the purpose. Send for enough to run a year, which is one sheet a month for each 10 cows or less. Each sheet contains record of the morning and evening milking for 10 cows for 31 days with a space for the total months produce of each cow.

Prices

For Ten Cows, Size 10x17 1/2 in.

6 Sheets for \$ .25, Postpaid  
15 Sheets for \$ .50, Postpaid  
25 Sheets for \$ .75, Postpaid  
50 Sheets for \$1.25, Postpaid  
100 Sheets for \$2.00, Postpaid

Address

Northwest Horticulturist and Dairyman  
P. O. Box 1604 Tacoma, Wash

Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor  
Montesano, Wash.

Holstens for Sale

A carload of well-bred, high-grade Holstein heifers, also 20 steers. For further particulars and prices address

H. S. ROYCE  
Eatonville, Wash.



wood Korndyke Maid, February 8, 1914, \$500; Hollywood Segis Spring Brook, September 14, 1914, \$180; Hollywood Lilith Johanna, March 13, 1915, \$200; Hollywood Inka Spring Brook, March 30, 1914, \$315; Hollywood Lilith Gelschecola, June 10, 1915, \$225; Hollywood Sunnyside Fayne, July 31, 1915, \$155; Hollywood Lilith Parthenea, January 20, 1915, \$215; Hollywood Bessie Pearl, November 24, 1914, \$200; Hollywood Bessie Posch, December 22, 1914, \$175; Hollywood Cloth Canary, May 5, 1914, \$290; Hollywood Lilith Johanna, January 5, 1916, \$205; Hollywood Howtje Canary, March 9, 1914, \$275.

H. A. Winsor, Shelton, bought: Hollywood Lilith Silver De Kol, October 2, 1915, \$115; Hollywood Floa Fayne, December 4, 1913, \$170.

B. S. Fryar, Sumner, bought: Hollywood Palmyra, February 6, 1916, \$175; Hollywood Longfield Lilith, September 27, 1915, \$210.

J. T. Harrah, North Yakima, bought: Hollywood Hazel De Kol, March 19, 1914, \$530; Hollywood Inka Hengerveld, February 13, 1912, \$305; Hollywood Hengerveld Palmyra, July 3, 1915, \$190.

Geo. Fowler, Duvall, Wn., bought: Hollywood Spring Brook De Kol, March 16, 1915, \$165.

Wm. Bishop, Chimacum, Wash., bought: Hollywood Chimacum Bos, August 18, 1915, \$350.

Donnybrook Farm, Bothel, Wash., bought: Hollywood Bernardo Canary, February 8, 1914, \$325.

Chas. W. Bennett, Issaquah, bought: Hollywood Johanna Aaggie, April 13, 1912, \$210.

E. Kuppenbender, Nehalem, Ore., bought: Hollywood Fayne Pietertje, December 20, 1913, \$160; Hollywood Canary Mercedes, February 9, 1914, \$190.

G. G. Brown, Snohomish, bought: Hollywood Bessie Silver De Kol, November 25, 1914, \$225.

L. Howell, Decatur, Wash., bought: Hollywood Spring Brook Cornucopia, November 26, 1915, \$170.

A. E. Smith, White Bldg., Seattle, bought: Hollywood Pietertje Fayne, July 27, 1915, \$250.

#### DEMAND FOR HOLSTEINS.

In a recent letter Mr. Chas. E. Fisher, of Van Woerden and Fisher states they shipped to Idaho recently 125 head of Holsteins and that the active demand for dairy cows is very brisk there. This firm also reports a better general demand for Holsteins since market for milk and butter fat has reached a higher and more staple plane.

#### PACIFIC INTERNATIONAL LIVE STOCK SHOW.

The sixth Pacific International Live Stock exposition will take place at Portland Union Stock Yards, North Portland, Ore., December 4 to 9. Owing to the splendid manner in which the Oregon Bankers' association the Portland Chamber of Commerce, the State of Oregon, and the different breed associations have made appropriations, the show this year will rank with the largest live stock expositions in the United States. Between \$20,000 and \$25,000 will be given in cash premiums for live stock; close to \$5,000 being offered in the dairy division which covers Holsteins, Jerseys Guernseys

and Ayrshires. O. M. Plummer, of North Portland, Ore., is general manager and N. C. Maris, North Portland, Ore., secretary; many of the officers and directors of the exposition being prominent men in western financial and live stock breeding circles. It is essentially a show for the people; no admission charge; no entry fee, or revenue of any kind, being held purely for educational purposes. In addition to the regular prizes the Holstein-Friesian Association of America is offering five special premiums in each of 17 classes; just over \$400 in all.

#### HOLSTEINS AND PUBLICITY.

##### Importance of Making Known Your Doings.

Say what one will or may about the power of individuality, breeding and production-backing in the Holstein market, they do not count for very much in a public sale among new buyers unless Publicity has been judiciously and sufficiently effected, says the editor of the Holstein Friesian Record. Tell the assembled crowd anything you please about the offering, or let them read in the catalog of unsurpassed breeding and ancestral records; unless they have heard of these ancestors and records before, you cannot fire them with that desirable enthusiasm which is written in four figures in the sale reports.

John Arfmann is very long on Publicity, as our readers well know. He has Publicity to burn, likewise sales of high-priced calves. These two things seem to go together, although of course the calves that Mr. Arfmann sells are high-qualified as well as high-priced. But—it is not because the calves are sired by a first-class bull and out of large record dams that they bring thousands instead of hundreds of dollars; it is because everybody who has ever heard of a Holstein has heard of the \$10,000 bull calf which grew into a \$50,000 herd sire; and of the records made by his daughters and their dams. "King" and his family have the advantage of a hustling press agent. Mr. Arfmann's Holstein breeding operations are as an open book before the public. He purposely keeps the book open.

A Curious Thing About Getting Publicity is That Once You Start Right, Everybody Helps You.

There are other first-class Holstein bulls and bred to large-producing A. R. O. cows which have had little, if any, boosting by printer's ink. Their progeny sell for hundreds instead of thousands of dollars. Why? Because buyers never heard of them and look askance, cautiously, when they are put up for sale. They haven't the confidence that would have been inspired by proper Publicity.

At the last Brattleboro sale John Arfmann sold a young son of his \$50,000 bull for \$2,000. Other good young bulls were offered at this sale, as study of the pedigrees in the catalogue will show; but none with the measure of Publicity, past and present, enjoyed by this fellow. It made him a "thousands" instead of a "hundreds" bull in the market.

This is the plain inference: Get Publicity, and get it "good and plenty." It pays.

**Only \$2 DOWN and One Year To Pay**

**For any Size—Direct from Factory**

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

**\$24 BUYS THE NEW BUTTERFLY**

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

**30 DAYS' FREE TRIAL GUARANTEED A LIFETIME**

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it along side of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

**Albaugh-Dover Co., 2187 Marshall Blvd., Chicago, Ill.**

No. 6 1/2 Over 75,000 Now in use

#### PUGET SOUND HERD HOLSTEINS

Our consignment to the breeder's auction sale to be held in Mt. Vernon, Wash., the 15th of November, consists of 2 bulls and 10 cows and heifers. One of the bulls has yearly records for this three nearest dams including his dam at 1 year 11 months of 860 lbs. butter and over 19,000 lbs. milk.

Three of the females are daughters of Quirinus Cornucopia. They are bred to "Chimacum King Korndyke Sadie Vale," whose dam holds the world's milk record 8 months after calving. Her yearly record at 3 1/2 years of age is 993.4 lbs. butter and 23,924.7 lbs. milk. His sire is one of the greatest bulls of the breed. The rest of the females are good young cows in milk and they are in calf to bulls with large yearly record dams.

WM. BISHOP

Chimacum, Wash.

#### GREAT RECORD HOLSTEINS

Thomas Yarr's consignment to the Breeder's Auction Sale, to be held in Mt. Vernon, Wash., the 15th day of November, consists of one young bull and three high class females.

The bull has for a dam the world's record heifer "Margie Wayne Boon," who at the age of 22 months 11 days produced 22.27 lbs. butter and 449.1 lb. milk in 7 days. She is a great granddaughter of Margie Newman. This young bull's sire is "Ononis Cornucopia Wayne Boon," the great proven son of Chimacum Wayne Boon, 33.69 lbs. butter in 7 days and 1,067.9 lbs. in one year.

THOMAS YARR, Prop.

Chimacum, Wash.

## THE STANDARD OIL COMPANY'S

It's all power because it's all refined gasoline—not a mixture.



## SPECIAL PRICE LIST OF HIGH CLASS BERKSHIRES

from the West's greatest Berkshire herd, is now ready for mailing. Every animal described and priced. Some exceptional bargains in service boars and open gilts. Write today for this price list.

**Silver Birch Farms Box 3 Newport, Wash.**

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman



## DAIRY FEED MIXTURES.

By H. L. Blanchard, Assistant Superintendent Western Washington Experiment Station, Puyallup.

The following combinations will be found to meet the conditions on many farms, and when fed to milk-producing cows may be expected to give good results.

(1) Twelve lbs. mixed hay with 30 to 40 lbs. corn ensilage will furnish the required roughage for a 1,000-lb. cow producing 25 lbs. milk daily. To go with this roughage, the grain mixture may consist of 100 lbs. ground oats, 200 lbs. shorts or bran, 25 lbs. oil meal. The cows that are producing over 10 lbs. milk daily may be fed at the rate of one lb. of this grain mixture for every 3 lbs. of milk produced daily.

(2) The above ration will answer well in all cases where the hay is other than clover oats and vetchs, oats and peas, or peas. Substituting 12 lbs. of clover hay for the 12 lbs. of mixed hay, the grain part of the ration may be changed to the following: 100 lbs. ground oats, 100 lbs. bran and shorts, 10 lbs. oil meal. Feed 1 lb. of this mixture for every 4 lbs. of milk produced daily. It will thus be noticed that with clover or other legume hay there is a considerable saving of grain. This saving is more or less in proportion as the hay is well or poorly cured.

(3) With alfalfa a different grain ration is required. Without ensilage of any kind, the following grain mixture may be fed with 20 lbs. of alfalfa and 2 lbs. of oat straw daily: 300 lbs. ground barley, 300 lbs. ground oats. Feed 1 lb. of the mixture for every 3½ lbs. of milk produced daily.

(4) Changing the feeds to 12 lbs. of alfalfa and 30 lbs. of good corn ensilage daily, the grain ration may well be changed to the following: 600 lbs. ground oats, 200 lbs. bran. Mix and feed 1 lb. for every 4 lbs. of milk produced daily. This grain mixture is also well suited to a roughage consisting of oat and vetch hay and corn ensilage, if 5 per cent of oil meal is added. Feed in the ratio of 1 lb. to 3½ lbs. of milk.

The cows should have an allowance of 1 ounce of salt each daily.

## WITH HOLSTEIN RECORDS AND BREEDERS.

## Consignment From Tualco Valley Farm.

In the consignments to the Mount Vernon Holstein sale, November 15th, from this farm are, including five young cows, a two year old heifer, due to freshen within a few weeks, a yearling heifer of show quality, a heifer calf and a six months old son of their great herd sire, Prince Aralia DeKol Burke. One five year old cow is a granddaughter of Colantha Johanna Lad.

Of special interest is the fact that all these cows are bred to their great bull, whose records for semi-official yearly work in his dam, sire's dam and dam's dam is unequalled by any other bull in service in the world. These records are 25,307 lbs. milk, 1037 lbs. butter in one year.

## Bull Out of Great Records.

Mr. Chas. Eldredge, of Chimacum, Wash., who is famous as a breeder of Holstein cows with high milk

## SANITARY BARN and DAIRY EQUIPMENT

Louden Standardized Manger fitted with Spring Balance Manger Divisions. How comfortable the cows look, each eating her apportioned feed without interference from her neighbor—the shape of the manger bringing the feed close so she does not have to strain to get it, and the manger divisions preventing her from straining to get the feed belonging to her neighbor.

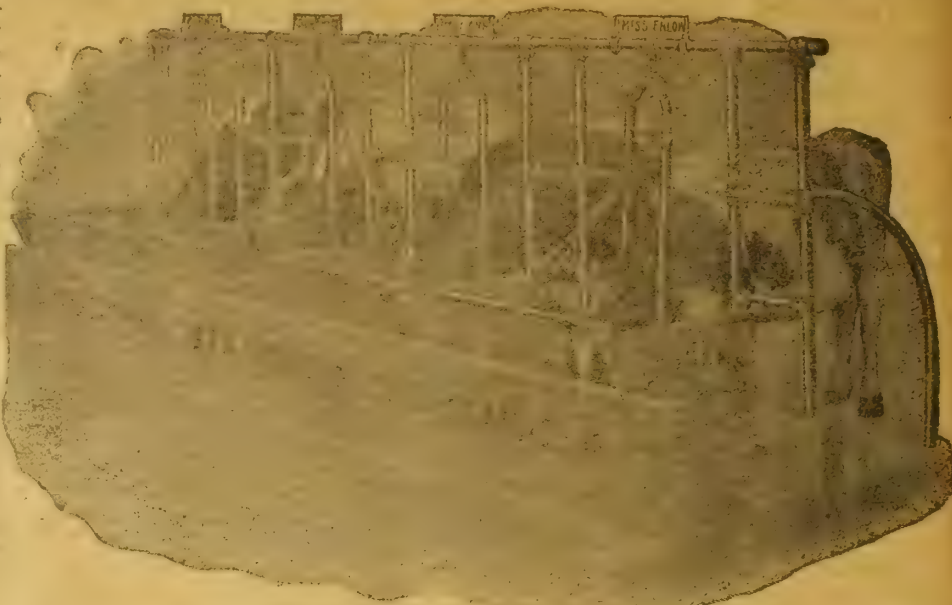
The Individual Manger is an advantage in a number of ways. It prevents the fast-eating cow from robbing the slow-eating cow—the one getting more than is good for her and the other not getting enough. The amount of feed can be given to different cows to suit their requirements. It prevents the cow from straining and injuring herself in trying to get the feed in the adjoining section. It helps to prevent one cow from infecting another. In short, it enables the dairyman to feed and handle his cows as his best judgment tells him they should be fed and handled instead of each cow striving to help herself.

When the Divisions are raised halfway up they will be held in a perfect balance at any higher point without

any additional assistance whatever. The attachment of the springs is such that they can be adjusted to help hold the divisions down when feeding and thus prevent the cows from nosing them out of position. With the different

sizes of springs and with the complete and convenient adjustment any size or weight of Manger Division may be balanced to perfection.

Write for full description list of barn equipment.



## NORTHWEST CREAMERY SUPPLY CO.

306 Second Ave. So. Seattle, Washington

## MR. DAIRYMAN

We carry a complete line of CANS, BOTTLES, MILK COOLERS, CREAM SEPARATORS, TESTERS, BOTTLERS, BRUSHES, WASHING POWDERS, DISINFECTANTS, DAIRY BARN EQUIPMENT, in fact, everything for a modern dairy.

Let us quote you before buying.

## Tacoma Implement Company

1521-23 Pacific Ave. Tacoma, Wash. Phone Main 8224

record, has now a young bull calf, whose 4 nearest dams average 33 lbs. butter in one week. One of his grandsires reached the 41-lb. mark. Mr. Eldredge 10 years developed great milk producers and is now raising stock whose butter records are up to like proportion. Some astonishing records, both in milk and butter, will appear from this herd for Mr. Eldredge is painstaking in every necessary detail for a good breeder, is persistent and has high attainable ideas. The Chimacum valley and the State of Washington are fortunate to have men of this class to devote their energies to the production of the very best attainable in live stock.

## The A. E. Smith Herd.

The A. E. Smith Company, Sumas, will consign mostly mature cows to the Mt. Vernon sale, most of which have A. R. O. records. Their entire herd is producing a good margin of profit at practical dairy work, several of the cows yielding over 100 lbs. milk per day. They are all in good flesh, and the best of health, which the owners believe essential for enduring dairy service. A large part of the feed is raised on the farm, consisting of clover for pasture, vetch wheat, oats and corn for silage.

## WHEN COWS ARE DUE TO FRESHEN.

By F. H. Scribner, Rosendale, Wisconsin, in De Laval Hand Book.

Probably as much importance hinges upon the freshening period as any other factor in keeping and developing dairy cows. The basis of modern dairying is the maternity of the cow and success in this art depends upon the reasonable consideration of this important fact. While we consider feed the principal means of bringing about maximum results, yet the best of results in milk production, or in use of feed stuffs, cannot be obtained unless some consideration has been made of the freshening period.

## DE LAVAL SEPARATORS

Make Fall and Winter Dairying more Profitable



There are special advantages in using the best cream separator during the fall and winter months. The milk from cows long in milk is hardest to cream, and likewise hardest to separate with an inferior separator.

Moreover, cream and butter prices are highest, so that the waste of gravity setting or a poor separator counts for most at this season.

Then there's the sweet, warm skim-milk for stock feeding, alone worth the cost of a separator in cold weather.

There is surely no reason to delay the purchase of a separator or to continue the use of an inferior one.

You can't afford to wait until next spring. Let the De Laval start saving cream for you right now and it will earn its cost by spring. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

## DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

SAN FRANCISCO

SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



A period of rest is an absolute necessity. A special purpose dairy cow directs all her energies toward digesting and assimilating feed for milk production, with the result that a large proportion of body tissue has been exhausted, or worn out. Sufficient time should be allowed between drying off and freshening time that the body may recuperate, and that some extra nourishment may be given the unborn calf at this particular period when greatest development takes place.

Building up worn-out body tissue is not the only consideration that creates a need of fixing up, for we find that the making of milk requires large amounts of nervous energy, and that these nerve centers need a relaxation from the strenuous work of the year, the same as a person doing severe mental labor requires a vacation even more than the person doing merely heavy physical labor. Six weeks of absolute rest from milk giving is none too much.

A cow that has not had some preparation for this important period is handicapped for a successful year's work. We often hear the expression: "My cows are dry now, and we are not feeding." I believe feed was never put to better use than after the cow is dried off. Feed liberally at this time, not with heating and constipating feeds, but feeds that will keep the digestion perfect, and yet be nourishing enough to build tissue and furnish proper necessities for the unborn calf. A straw stack cow never made a world's record.

A memoranda book in the barn giving dates when each cow is due to freshen is of utmost importance, for without this knowledge, cows may be milked either too long or not long enough.

The cow should freshen in a box stall, which has been thoroughly cleaned and disinfected. She should occupy this stall some time in advance, that she may become acquainted and used to her new surroundings, avoiding draughts, excitement, and cold drinks of water, all of

## POLAND CHINA

Am selling fall pigs from big fine sows at \$10 each, crated f. o. b. with pedigree.

ROY MINTER  
Castle Rock, Wash.

which have a tendency to bring on milk fever, as well as udder troubles. A dose of salts and hot bran mash after calving, aid digestion and carry away any feverish condition. The udder should not be all emptied out for at least two days, simply relieving those quarters the calf has left.

Increase the feed gradually until such time as the cow appears in a normal condition, when she may be given a full feed.

## JERSEY BULL FROM WAIKIKI FARM.

Manager Ira P. Whitney writes that the Jersey bull advertised in the October issue of the Horticulturist & Dairyman by the Waikiki Farm, Spokane, was sold to S. A. Barnes, of Boardman Oregon, to head his herd of registered Jerseys. Mr. Barnes formerly lived at Castle Rock, Washington, and has a number of cows which have large records.

## RICHMORE FARM JERSEYS.

A number of visitors to the Richmore Farm of Mr. Chas. Richardson, about 12 miles south of Tacoma, during the Gerlinger Tractor demonstration recently, were much attracted by his fine herd of registered Jerseys. There was ideal dairy type, large frame, big udders and every sign of large milk flow and endurance. The butter fat test average high and the milk commands a premium above the regular market price. The barns were well lighted, sanitary and ideal in plan for good dairy work. The selection was made from some of the highest producing herds in the United States, including a sire from the famous Jersey herd of C. I. Hood, Lowell, Massachusetts. Here is a good chance to get some choice breeding stock when there is any surplus for disposal.

# Why Not?

## Attend the 4th Annual Pacific International Holstien Sale

North Portland December 8th, 1916

100 HOLSTIEN FRESIEN CATTLE 100

REMEMBER THIS IS

"The Quality Sale of the West"

No stock over 8 years of age, all free from blemish and guarantee to be right in every way.

You can't afford to miss this sale, so make a note of the date and plan to be there.

WRITE FOR CATALOG.

GEO. A. GUE, SALES MANAGER

North Yakima, Wash.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman

## CASCADE INTERNATIONAL STOCK SHOW

NORTH YAKIMA, WASH.

November 20 to 25

SOMETHING DOING EVERY DAY. EDUCATIONAL. ENTERTAINING.

A splendid place to exhibit your stock.

A splendid place to sell your stock.

A splendid place to buy stock.

## CASCADE INTERNATIONAL STOCK SHOW

High grade cattle and horses, Tuesday, November 21st.

Car lots and pens, Wednesday, November 22d.

Registered Holsteins, Thursday, November 23d.

Registered horses, hogs and sheep, Friday, November 24th.

Registered Beef and Dairy Cattle, Saturday, November 25th.

CUT 'ER LOOSE AND HEAD FOR YAKIMA

EXCURSION RATES ON ALL LINES.

GEO. A. GUE, SECRETARY



GAMBOGE'S VELLUM MAJESTY, A TYPICAL JERSEY BULL

Gambo's Vellum Majesty, the Jersey bull shown above, is owned by Mr. M. D. Munn, of St. Paul, Minn., President of the American Jersey Cattle Club. Jersey bull type is exemplified in this animal. Strong constitution is noted by his deep heart girth and spring of rib, yet dairy temperament and refinement are combined in Gambo's Vellum Majesty. He is bred in the purple; his sire, Julia's Majesty, was grand champion at many of the large western shows in 1916 and his grandsire, Oxford Majesty recently imported to this country from the Island of Jersey, was a many times winner on the Island. Twenty-two daughters of Oxford Majesty were sold within the year at an average price of \$1,266.

When Writing to Advertisers Please Mention the Northwest Horticulturist and Dairyman





### CASCADE INTERNATIONAL SHOW.

The Cascade International Stock Show, to be held at North Yakima, Wash., November 22 to 25, is predicted a big success by Dr. S. B. Nelson and leading stockmen who will take part.

"The preliminary work done by Dr. Prior in the dual capacity of president and secretary, has been most effective, and with George A. Gue in charge as secretary and manager there can be no failure. Mr. Gue has been doing splendid work since taking office, and he is getting the stockmen all over the northwest lined up.

"Splendid stuff is promised and lined up for the night show," says Mr. Gue. "We will have the finest and most meritorious horse show since the palmy days of Rome or whenever it was they had the best. In one event there will be 50 little girls and 30 little boys and 40 little ponies in a gorgeous spectacular performance. There will be a great parade, such as has never before been seen in the Yakima valley which will follow the 45-minute performance by the children. Then there will be a second parade which will be worth anyone's time in coming a long distance to see.

The stockmen's banquet will be given under the direction of the Yakima Improvement Club on the evening of November 23d.

### JERSEY COW SOPHIE 19TH

#### \$25,000 Refused for Record Cow.

The unprecedented sum of \$25,000 has been refused for Sophie 19th, of Hood Farm, world's record long-distance butter cow and world's record Jersey. The offer was made by Miss May Irwin, the famous actress, and was rejected by Sophie's owner, Mr. C. I. Hood, of Lowell, Mass. Miss Irwin owns a good herd in New York State, and while visiting the National Dairy Show at Springfield, Mass., where Sophie is on exhibition in a special enclosure, she became captivated by the cow, and sent a check for \$25,000 to Mr. Hood, but the offer was refused.

Never before has such a sum been offered for a cow; but Mr. Hood was farsighted in rejecting the offer, for Sophie is in calf to Champion Torono's Son, and if the calf is a bull a new great sire will have been born.

### JERSEY WINS BUTTER TEST.

At the annual butter-test conducted at the Brockton Fair, the Jersey cow, Morny Cannon's Queen Bess, owned by A. Victor Barnes, New Canaan, Conn., won over all breeds in a strong competition. She made the excellent amount of 3½ lbs. of butter in 24 hours. Eleven cows, including Holsteins, Ayrshires and Jerseys, were in competition.

### THE JERSEY SPECIAL TRAIN.

The Jersey Special to the National Dairy Show was an unprecedented success. It showed the East that the West can breed the best of stock. It gave to city dwellers an idea of the magnitude of the dairy industry and the progressiveness of the men engaged in it, and it blazed the trail for the advance of the dairy cow—the animal that the East must place her reliance upon if she wishes to rebuild her worn-out soils.

### COOLING HOT-BOTTLED PASTEURIZED MILK BY AIR BLASTS.

Proved Economical by Experiments of Dairy Specialists of U. S. Department of Agriculture.

To bring about economically the relatively rapid cooling of hot-bottled pasteurized milk, which is essential after pasteurization if freedom from bacteria is to be preserved, dairy specialists of the U. S. Department of Agriculture suggest the forcing of outside air over crates of hot, milk-filled bottles during the cooler months of the year, and artificially cooled air during the summer months. Even during seasons when the outside temperature is as high as 60° or 70° F., it is believed that those plants that pasteurize on a large scale would find it worth while to give the hot milk its initial reduction of temperature by forcing outside air over the bottles. Artificial refrigeration may then be used to bring the temperature of the milk down to the desired 45° or 50° F. for holding.

The experiments in the cooling of pasteurized milk conducted by the specialists demonstrated that in using the airblast system more satisfactory results can be obtained when the cool air is forced from the top of stacked crates downward. When the air was forced upward through

## Sale of Registered Holistiens

AT THE  
CASCADE INTERNATIONAL  
STOCK SHOW

November 20 to 25

Yakima Valley's Breeders 4th  
Annual Registered Holstien Sale

Thursday, Nov. 23d, 1916

10.30 P. M. North Yakima, Wash.

#### CONSIGNERS

E. B. Marks, No. Yakima H. C. Davis, Granger, Wn.  
William Todd & Sons, No. Yakima Pat McCoy, Granger, Wn.  
John Heffron, No. Yakima Moorehead & Hobson, Outlook, Wn.  
Roselawn Stock Farm, Sunnyside

## 75 Head Yakima Breeding Tuberculine Tested

COME TO A GREAT STOCK SHOW AND ATTEND A SPLENDID HOLSTEIN SALE

WRITE FOR CATLOG. EXCURSION RATES ON ALL LINES  
GEO. A. GUE, SALES MANAGER

## Puget Sound Herd Holsteins

Production as well as individuality

Home of the world's record milk cow

The first 17 head to finish their yearly records, which include six 2-year-olds, three 3-year-olds and eight cows, average for the lot 20,223 lbs. milk and 828 lbs. butter. Five of the lot average 1020 lbs. butter and 25,340 lbs. milk for a year. The dams of our three herd-bulls average 26,247 lbs. milk and 1020 lbs. butter a year.

Stock for sale. Young bulls whose dams and sire's dams have large yearly records.

WM. BISHOP,

Chimacum, Washington

the crates, or alternately upward and downward, the bottles did not cool uniformly. With the circulation of air forced downward at 40° F., the milk, with an initial temperature of 142° F. was brought to 50° in 1 hour and 27 minutes, approximately one-third the time required when the bottles were exposed to still air at 40° F.

Bacterial counts under different conditions showed that it is desirable to cool the milk after pasteurization within 5 hours at most. In order that there shall be a safe margin, the dairy specialists of the Department recommend that the necessary reduction in temperature be effected in 3 hours. Immediate refrigeration showed no advantage compared with cooling over a longer period while the latter method proved to be less costly. The time required to cool milk to any great extent by natural circulation, the experimenters conclude, is too great for satisfactory operation on a commercial scale. Even with forced air effective cooling can not be accomplished when

## Vetch and Other Seed

Choice Clean Vetch at bargain prices while it lasts, as the demand is strong.

We also supply seed of Sweet Clover, Timothy, Blue Grass, English and Italian Rye Grass, Alfalfa and Sudan Grass.

Prices on application.

CORVALLIS FLOURING MILLS  
CO.

Corvallis, Oregon

containers holding more than a quart are used. In the experiments no appreciable difference in the cream line was found between the bottles cooled slowly and those cooled immediately, nor did the cooling at the slower rate noticeably affect the flavor of the milk.

The various experiments with cold and hot-air blasts directed against bottled milk are described in a professional paper, Department Bulletin 420, recently issued by the U. S. Department of agriculture.



# WALLA WALLA VALLEY COW TESTING ASSOCIATION RE-ORGANIZES FOR ANOTHER YEAR'S WORK.

The re-organization of the Walla Walla Valley Cow Testing Association for another year's work has just been completed by County Agriculturist O. V. Patton, assisted by Mr. W. E. Meyer, of the U. S. Department of Agriculture, and Mr. N. C. Jamieson, of the State College. The organization has extended its field of operations into the Burbank section and will test over one hundred cows there.

The association started work on the first of November last year, with 25 members and 453 cows, and will start on the first of next month with 36 members and 500 cows.

The Cow Testing Association is a co-operative organization of dairymen who elect their own officers and board of directors. The Board of Directors employ a tester, who spends one day at each place, weighs the morning and evening milk from each cow, takes a sample and tests it for butterfat. Herd record books are furnished free by the U. S. Department of Agriculture and the State College. This is filled in by the tester and shows the data for each cow as follows:

1. Date fresh.
2. When bred.
3. Pounds of milk for each month.
4. Pounds of Butterfat for each month.
5. Amount of feed.
6. Cost of feed.
7. Profit or loss.
8. Cost of feed for one pound of butterfat.
9. Cost of feed for 100 lbs. of milk.

At the end of the testing year this data is all totaled for the year.

Each member pays the Treasurer at the rate of 12½ cents per month per cow for those that are placed in the association at the beginning of the year. Cows added after the second month are charged for at the rate of 15 cents per month. Each member agrees to remain in the association for the testing year and if one cow is sold or dies another may be added in her place.

During the past eleven months 596 different cows have been tested and of that number 123 were sold for dairy purposes and 104 were sold for slaughter as being unprofitable.

The following dairymen have joined the association for the next twelve months:

Coyle Brothers, H. P. Vozberg, Wm. S. Reser, R. C. Humphrey, Penitentiary, O. C. Plaquet, W. H. Kirkman, A. A. Bixby, E. S. McKinney, E. C. Burlingame, C. R. Watt, D. W. Dorrance, M. B. Signs, Wm. E. Gross, Chas. Baker, R. H. Wellman, V. E. Brown, E. S. Green, A. L. Russel, Mrs. E. Lowden, Harer & Ridley, Swegle Brothers, W. W. College, O. S. Reaves.

## DAIRY COWS SUFFER FROM LACK OF SHELTER.

The dairy cow often suffers the most from exposure to the weather before real winter has begun. Exposure to cold rains is often more injurious to the animal than the colder but dry weather.

The dairy cow is not like the fat steer, protected from cold by a layer of fat. As a result bad weather causes a big drop in milk produc-

tion. So long as the weather is dry it is just as well to leave the cow outside nights, but every cold rain should find her protected.

It is not necessary in the climate of the Pacific Northwest to go to any great expense in order that the barn may be warm. The main thing is to have tight walls so there is no draft or wind and a good roof. Care should be taken in arranging the stalls in the form of a platform of the right length and a gutter of sufficient depth to hold the manure. The cleanliness of the milk depends to a considerable extent upon having the barn built so the cow will keep herself clean.—C. H. Eckles.

## HOLSTEIN JR. CHAMPION. Queen Piebe Mercedes, Four Years Old.

Mr. E. C. Schroeder, Moorhead, Minn., has brought out another world record cow which produced as junior four-year-old 30,230.2 lbs. milk and 1,111.56 lbs. butter fat, equivalent to 1,389.45 lbs. 80 per cent. butter. Her average fat was 3.68 per cent. The total cost of feed was \$190 and allowing 4 cents per quart for her milk there remained an income of \$563.24, or net profit of \$373.20 besides a valuable calf. This record is likely to be matched in the Pacific Northwest in the near future.

## BIG GUERNSEY SALE.

The most remarkable public sale in Guernsey history was staged at Langwater Farms, North Easton, Massachusetts, on October 10th. Seventy-five head were sold for a total of \$80,625, an average of \$1075 per head. fifty-four females averaged \$1300. Nineteen daughters of the great May Rose bull, Imp. King of the May 9001 A. R., averaged \$1969 apiece.

The highest price of the sale was given for Langwater Dairymaid 26377 by C. L. A. Whitney, of Albany, New York. The amount, \$6150, is the highest price ever paid for a Guernsey animal. Langwater Generous 41958, a daughter of Imp. King of the May 9001 A. R. sold for \$5000 to John S. Ames, of North Easton, Massachusetts, while a second daughter of the same great sire, Langwater Easter Lily 39269, was purchased by H. G. Lapham, of Brookline Massachusetts, for \$4200. Mr. F. D. Stout, of Angus, Wisconsin, purchased Langwater Charity 38605, a great prize winning daughter of Imp. Yeoman 8618 A. R., for \$3800.

Three thousand dollars, the highest price given for any bull in the sale, was paid by Branford Farms, of Groton, Connecticut, for the yearling bull, Langwater Foremost 39191, a son of Langwater Generous 41958 and Langwater Fashion 23660.

## GRADE GUERNSEY RECORDS.

Mr. Harry E. Keating, of Burton, has a grade Guernsey cow which produced 9,776 lbs. milk in 10 months of her lactation period. Her test at different times was 4.6, 5 and 5.7 per cent fat.

His second grade Guernsey cow, Lize, gave 10,158 lbs. milk in 10½ months of her lactation period, and her test was 4.6, 5 and 5.5 per cent.

Mr. Keating has a registered Guernsey sire obtained from E. R. Brady to head his herd and now has some choice calves nearly full pure bred.

# Waikiki Farm

Breeders of  
JERSEY and Ayrshire CATTLE  
Duroc Jersey Swine  
Shropshire Sheep

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

# MONEY IN SHEEP

Every reader of The Northwest Horticulturist and Dairyman ought to have some sheep. Every man who owns a good dairy cow or knows how to grow an apple tree should succeed with them. Sheep clean up on the farm; they eat weeds, keep down waste and turn volunteer crops into cash. Get some sheep! Get them quick! Now you must have a good sheep paper, one which is free from outside influence, which prints uncolored news, which is independent and fearless. In 1912 the paper that advised the Western sheepmen to keep his good sheep was the Shepherd's Journal. That's the paper you want. A beautifully printed paper, well illustrated and edited, published monthly by independents of the stock yards, well worth a dollar a year. Send postal or express order.

HANK REID, PUBLISHER

6 North Michigan Boulevard, Chicago, Ills.

Something you want to know about sheep? Ask "Hank."



## HAMPSHIRE SWINE

Early maturing, good feeders, a profit-producing breed. Our show records include highest awards. Stock of the best quality. Youngsters, unrelated, for sale.

GREEN GROVE STOCK FARM

J. M. Fruitts, Prop. Enterprise, Oregon

## KAR-NITUM, A WONDERFUL REMEDY FOR CATTLE

Will Cure and Prevent Tuberculosis.

Read what Henry S. Royce, the well-known stockman, has to say:

Kapowsin, Wash., Nov. 1, 1916.

Kar-Ru Chemical Company,

Tacoma, Wash.—

Gentlemen: About eighteen months ago we fed your Kar-Nitum remedy for tuberculosis to a reacting cow that physically showed signs of disease. After a few months treatment, this cow passed a successful tuberculin test, and today is a healthy animal.

The test that she was subject to was a severe one, as she was not only given the subcutaneous but the intradermal. Some eminent veterinarians claim that cattle can be plugged against the subcutaneous test, and the work was thus checked by giving the intradermal test a few hours after the results were obtained from the fever test. As stated above the same was satisfactory and the cow is in the best of condition at this time.

If any stockmen doubt this and want further proof, we will be pleased to produce the same in the way of a certificate, and you may refer any doubters to us.

Furthermore, our herd of seventy animals were fed the remedy as a preventive of tuberculosis, and we wish to certify to the fact that after commencing the treatment we never got a reactor. We have seen animals that were so rneumatic, thin and run down that they were not fit for slaughter restored to perfect health after sixty days treatment with Kar-Nitum.

This testimonial, if you want to consider it one, is coming without a string attached to it, and we hope it will do someone some good.

Very truly yours,

TWIN LAKES FARM CO.

By Henry S. Royce, Pres.

Write for descriptive booklet.

KAR-RU COMPANY,

Tacoma, Wash.



## MEND YOUR HARNESS NOW

This Awl, a money saver for the farmer, may prevent serious accidents. Drivers find it handy to take with them. Sent for two-year renewal payment and 1 new subscriber, total \$1. Horticulturist & Dairyman, Box 104, Tacoma, Wash.



## "Selecting and Developing the Jersey Herd"

Is a booklet by Prof. Hugh G. Van Pelt. It tells how you can build a well-developed, money-making Jersey herd by proper selection and judicious breeding. The future of your dairy herd depends upon how you select your foundation animals and how they and their offspring are developed. The Jersey cow combines beauty with dairy conformation. Healthy, vigorous and profit-producing, she lifts the mortgages and increases bank accounts. Send for book today.

American Jersey Cattle Club  
370 West 23rd St. New York City

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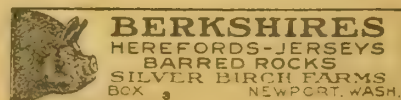
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## HOUSEHOLD DEPARTMENT

CONDUCTED BY MRS. G. A. SOMMERSON

## LOOKING AHEAD.

If thou art worn and hard beset  
With sorrows, that thou wouldst forget,  
If thou wouldst read a lesson, that  
will keep

Thy heart from fainting and thy soul  
from sleep,  
Go to the woods and hills No tears  
Dim the sweet look that Nature wears.

Were half the power, that fills the  
world with terror,

Were half the wealth bestowed on  
camps and courts  
Given to redeem the human mind from  
error.

There were no need of arsenals or  
courts.

Nothing useless is or low;  
Each thing in its place is best;  
And what seems but idle show  
Strengthens and supports the rest.

Angels of Life and Death alike are his;  
Without his leave they pass no  
threshold o'er;

Who, then, would wish or dare, be-  
lieving this,  
Against his messengers to shut the  
door? —Longfellow.

## COURTESY.

Treating a customer like a rich  
uncle, so that you may extract his  
coin, is not courtesy—that's foresight.

Offering a seat to the man who  
enters your office is not courtesy—  
that's duty.

Listening to the grumblings, growl-  
ings and groanings of a bore, with-  
out remonstrating, is not courtesy—  
that's forbearance.

Helping a pretty girl to cross the  
street, holding her umbrella, carry-  
ing her poodle—none of these is  
courtesy. The first two are a pleas-  
ure, and the last is politeness.

Courtesy is doing that which noth-  
ing under the sun makes you do but  
human kindness. Courtesy springs  
from the heart; if the mind prompts  
the action, there is a reason; if  
there be a reason, it is not courtesy,  
for courtesy has no reason.

Courtesy is good-will, and good-  
will is prompted by a heart full of  
love to be kind.—THE AMBASSADOR

## POINTS ABOUT ROSES.

Roses may be divided into classes  
according to the purposes for which  
they are used, as for lawns and bor-  
ders, for arbors or trellises, for cut  
flowers, and for other ornamental  
purposes, according to Farmer's Bul-  
letin no. 750.

Native species and those least  
modified by man's crossing and selec-

tion are most suitable for lawn and  
border planting.

Climbing roses used for arbors and  
trellises may be handled either to  
give an abundance of bloom or to  
produce shade, but they can not do  
both satisfactorily, and they are not  
as well adapted to the production of  
shade as many other plants.

Cut-flower roses need clean cul-  
ture, severe pruning, and special care;  
therefore, they should be planted by  
themselves in secluded beds and  
should not be used to beautify the  
grounds in place of the roses appro-  
priate for lawns and borders.

Roses are not very satisfactory for  
hedges.

The Wichuraina rose is useful as  
a ground cover.

Tree roses are not satisfactory, ex-  
cept in the Pacific Northwest.

The essentials for successful growth  
are a well-drained retentive soil thor-  
oughly enriched, preferably with rott-  
ed manure. Cut-flower roses espe-  
cially need heavy annual manuring.

Special care must be exercised to  
prevent the roots from drying when  
out of the ground for transplanting.

Own-rooted plants are best for the  
average grower.

Cut-flower roses need protection  
near the northern limits of the suc-  
cessful cultivation of the variety.

Dormant roses should have one-half  
to two-thirds of the wood removed  
at the time of transplanting.

Border roses should have little  
pruning, the removal of the dead  
wood and the cutting of the whole  
bush to the ground every 5 to 8  
years being best for most varieties.

Climbing roses should be pruned  
just after blooming by having the  
wood of the previous year's growth  
removed.

Cut-flower roses should be cut each  
spring to within 6 inches or 1 foot  
of the ground for finest blooms, or  
one-third to one-half the wood should  
be left for the greatest quantity of  
bloom.

Watchfulness is the price of suc-  
cess with roses, especially with the  
climbing and the cut-flower varieties.

Advice as to varieties for a partic-  
ular region is best obtained from  
the nearest grower or nurseryman.

SILVERWARE EASILY  
CLEANED.

An easy and effective method of  
cleaning tarnished silverware by boil-  
ing in a soda and salt solution in  
contact with a clean piece of alum-  
inum or zinc is recommended to  
housewives by the U. S. Department  
of Agriculture as a result of studies  
made by its specialists in home  
economics. The necessary procedure  
is so simple that it may be followed  
successfully in practically any home.

The cleaning system known as the  
electrolytic method has been well  
recognized for several years.

## The Electrolytic Method.

The tarnish which occurs on silver  
is not due to oxidation, but is de-  
pendant entirely upon the action of  
sulphur. In most cases the source  
of the sulphur causing tarnish is  
rubber, wool, foods like eggs and  
the sulphur in the air due to burn-

TEST  
OF 21  
YEARS

The Northwest Grocery Company  
has been and is doing a strictly cash  
business with 10,000 satisfied cus-  
tomers. Why not you? Your mail  
order will receive the same careful  
attention as though you came in per-  
son.

## OUR CATALOG

Gives you lowest prices on reliable  
Groceries. We pack and deliver to  
the freight depot free. Send postal  
today for our catalog and further  
information. Please mention this paper.

## Northwest Grocery Co.

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TACOMA WASH.



Buy the Gasoline  
Lanterns, Lamps,  
Mantels and repairs  
you require early.  
Send for descriptive  
circular at once to

BEN OLSON CO.,  
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Tacoma, Wash.

## HARDWARE

Complete lines for needs of farmers.  
High quality, prompt service, right  
price.

Roofing Paper  
Write us your needs.

HENRY MOHR HARDWARE CO.  
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## World's Greatest Entertainer

Sent to Your  
Home on  
FREE TRIAL  
You can hear all  
that's best in music.  
Everybody will enjoy  
it.

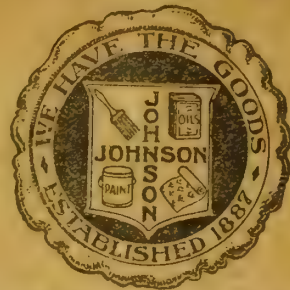
Our Free Trial plan will bring you any style Victrola,  
Columbia or New Edison Diamond Disc. Prices  
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Write today for free illustrated catalogue.  
HOPPER-KELLY TALKING MACHINE CO.  
Northwestern Sales Agents Seattle, Washington

ing illuminating gas and coal. The  
electrolytic cleaning method depends  
on the facts that this tarnish of sil-  
ver sulphid is slightly soluble in the  
hot solution employed, and that it  
is broken down chemically and its  
silver content redeposited on the  
ware when the proper electrical con-  
ditions prevail. The presence of both  
the silver and the aluminum or  
zinc in a hot solution provides  
the necessary electrical conditions.  
Under this method, therefore,  
practically all the silver in the  
tarnish is returned to the object  
being cleaned. When silver polishes  
are used, on the other hand, all the  
silver in combination in the tarnish  
is removed.

## How to Proceed.

The necessary materials are a  
graniteware cooking utensil deep  
enough to allow the silverware to  
be covered by the solution; a clean  
piece of aluminum or zinc, prefer-  
ably the former; and baking or wash-  
ing soda. The solution, consisting  
of a teaspoonful of baking or wash-  
ing soda and a like amount of table  
salt to each quart of water, is brot  
to a boil in a graniteware or enam-

## A. S. Johnson &amp; Co.



1142 C Street Tacoma, Wash.

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## Indoor Closet

More Comfortable,  
Healthful, Convenient  
Eliminates the out-door  
privy, open vault and cess-  
pool, which are breeding  
places for germs. Have a  
warm, sanitary, odorless  
toilet right in your house.  
No going out in cold weather.  
A boon to invalids. Endorsed  
by State Boards of Health.

ABSOLUTELY ODORLESS  
Put It Anywhere In The House  
The germs are killed by a chemical process in  
water in the container, which you empty once a  
month. Absolutely no odor. No more trouble  
to empty than ashes. Closet absolutely guaran-  
teed. Write for full description and price.  
ROWE SANITARY MFG CO. 1649 ROWE BLDG., DETROIT,  
Ask about the Ro-San Water Closet—Hot and Cold  
Running Water Without Plumbing MICH.

eled utensil. A sheet of aluminum  
or clean zinc is dropped in. The  
tarnished silverware is then im-  
mersed in the solution so that it  
is in contact with the sheet of alum-  
inum or zinc. The tarnish should  
disappear in a few seconds. The  
silver object should then be removed  
from the solution, rinsed and dried  
with a soft cloth.

Aluminum is much more satisfac-  
tory than zinc for use in this clean-  
ing process since it does not become  
coated with a layer of carbonates  
which would interfere with the chem-  
ical reaction. Zinc does form car-  
bonates and, if used, must be clean-  
ed frequently in dilute hydrochloric  
acid. A small sheet of aluminum  
may be purchased especially for  
silver cleaning purposes or a piece of  
an old aluminum utensil well clean-  
ed may be used. Utensils which  
would later be used in cooking opera-  
tions should never be employed in  
cleaning silverware by the electro-  
lytic method. If very large pieces  
of silver are to be cleaned and a  
container is required larger than  
can be placed conveniently on the  
stove, the hot solution may be poured  
into such a vessel and the silver  
object then immersed. The method  
is most effective, however, when  
the solution boils during the clean-  
ing process, and efficiency is rapidly  
lowered as the temperature of the  
solution falls below the boiling point.

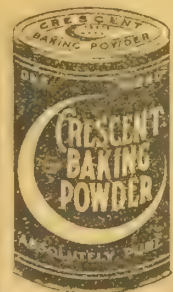
## Special Considerations.

The electrolytic method gives the  
cleaned silver a satiny finish after  
several cleanings. If a burnished  
surface is desired, the silver must  
from time to time be polished lightly  
with some abrasive polishing material  
such as powdered whiting. The  
study made by the Department spec-  
ialists included a comparison of the  
amount of silver lost when the whole  
tarnish was removed by polishing  
and when the electrolytic method was  
used. It was found that when whit-

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With your cakes & biscuits?

## Crescent Baking Powder



insures the most  
delicious quality -  
it always raises  
the dough.

One Pound 25c  
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Seattle, Washington



ing paste was used as an abrasive, spoons lost nearly 0.01 of a gram of silver each, approximately twenty-five times as much as when the "handmade" electrolytic method was employed.

### COURAGE.

The way to get cheerful is to smile when you feel bad; to think about somebody else's headache when your own is most bustin'; to keep on believin' the sun is a-shinin' when the clouds is thick enough to cut.—Mrs. Wiggs.

### TO WALK CORRECTLY.

A good figure was never so sought after as it is in these days, and it is right that people should make the best of themselves in this and every day.

It is a bad habit to fold the arms. By doing so you pull the shoulders forward, flatten the chest, and impair deep breathing. The position you hold your body in soon becomes a habit. Do you think, for instance, of folding your arms across your chest before you do it? I dare say not; it has, you see, become a habit. Try one that will expand instead of flatten the chest. Keep the back of the neck, too, close to the back of the collar whenever possible.

Always carry the chest further in front of you than any other part of you, certainly than the part below the waist. But draw this latter part up and up many times a day, especially if you are inclined to become fleshy.

### THANKSGIVING.

This month, in which a Thanksgiving day is observed, is a good time to take stock of the blessings and the trials. Often the latter seems to over balance the former, until actual counts are made. Then again, trials and burdens often lead to larger blessings than would otherwise be obtained. The men and women who are immensely successful do not seek to be relieved of difficulties but rather look for strength to bear and overcome them. The sunshine is always above the clouds, and our blessings greater than our difficulties, providing divine guidance is sought. Our object should be true visions of possibilities which may be attained by persistent efforts. Seek, choose, act and the reasons for thanksgiving will be numerous.

### PRACTICAL SUGGESTIONS.

In washing white ribbon the water should be warm rather than hot, and the soap a fine white one. Rinse in two clear waters and one strong blue one.

Flannel will not harden or shrink if, when new, it is put into clean cold water frequently. Wash well in warm water, using a little soap to remove the oil. Flannel thus washed never hardens.

When pumice stone and lemon are unavailable, wet the ends of common sulphur matches and rub the ink-stained fingers with them. The spots will disappear.

If you unexpectedly find your wire clothesline hopelessly rusted, lay strips of newspaper on it and pin clothes over them, then the first bright day give your line two good coats of gray paint.

The application of alcohol helps to keep windows clean in winter, and also keeps them free from frost; at least, heavy frost. Wood alcohol may be used, but one should wear rubber or heavy gloves when using it.

### POOR MAN'S PUDDING.

One cup chopped suet or  $\frac{1}{4}$  cup butter, 3 cups flour, 1 cup raisins, 1 cup sweet milk 1 cup molasses, 1 teaspoon soda,  $\frac{1}{2}$  teaspoon cassia,  $\frac{1}{2}$  teaspoon nutmeg. Steam three or four hours. We prefer butter to suet.

Sauce for pudding—1 cup sugar, 1 cup water, 1 cup cream,  $\frac{1}{2}$  teaspoon salt, 4 teaspoons corn-starch. Dissolve sugar in the water, and when hot stir in corn-starch mixed smooth in little cold water. Add salt and stir until clear. Remove from the fire and when cold whip the cream. Stir into the sauce and whip a few minutes. Flavor with  $\frac{1}{2}$  teaspoon vanilla.

### SAVORY POTATOES.

3 cups of boiled potatoes.  
3 tablespoonfuls of cooked ham, lean bacon, or tongue.  
1 tablespoonful of butter.  
1 tablespoonful of flour.  
 $\frac{3}{4}$  cupful of milk or stock.  
2 tablespoonfuls of grated cheese.  
2 teaspoonfuls of vinegar.  
Salt and pepper.

Melt the butter in a saucepan, stir in the flour smoothly, add the stock or milk, and stir this sauce over the fire until it boils. Add the ham and vinegar, and season the mixture carefully. Cut the potatoes into rather thick slices, and put layers of them and the sauce into a buttered, fire-proof dish. Sprinkle the cheese over the top, and bake in a quick oven until temptingly browned. Serve in the dish in which it is cooked.

### RICE COMBINATIONS.

Rice may be cooked in a double boiler without stirring. Use about three cupfuls of water and a level teaspoonful of salt to each cupful of rice. If a more savory dish is desired, skim milk, whole milk, meat broth, strained tomato juice, or vegetable broth may be used in place of water. Rice may also be combined with protein-rich foods, such as milk, cheese, and eggs for use in place of meat, or with small amounts of vegetables to make the latter "go further." Of course, such a dish does not contain as much tissue-building protein as if it were made entirely of meat, but when the meat provided ordinarily is generous and the aim is to reduce the cost without lessening the attractiveness of the food, such combinations are well worth trying.

## STOCK

### THE STEFFEN HERD.

Mr. Herman Steffen, Monroe, Wn., who was awarded the largest number of prizes at the Snohomish County Fair, has done remarkably well as a breeder of Holsteins since he started with a few pure bred animals some years ago. Several of his young cows are going well up towards the 30-lb. mark. He has been particular and fortunate in choice of herd sires evidenced by the increase of yields of young cows over their



Warm  
as toast

## Perfection Oil Heater

Cheery comfort for chilly evenings.  
A gallon of PEARL OIL gives nine hours of intense, odorless heat—wherever and whenever you want it.

Prices: \$3.75 to \$7.75

Dealers Everywhere

**STANDARD OIL COMPANY**  
(California)

dams. He is also careful and persistent in every necessary operation required on a good dairy farm. The feed and feeding is well planned for ahead, and the work attended to with utmost regularity. Every necessary comfort is provided for the animals, though not expensive barns and equipment, just plain, practical dairy facilities such as any good farmer may possess who has foresight and energy. His efforts are well rewarded by the good price paid for his surplus stock at the public sales. As a breeder and dairyman his example of success is practical for many of our readers to observe.

### DEMAND FOR HOGS.

Mr. Roy Minter, Castle Rock, Wn., writes that there is considerable inquiry for pigs from those who wish to raise hogs next year. This is pleasing to breeders who have good stock, for they would rather supply farmers than to see their choice pure breeds go direct to the block, even at the present good market prices.

The Poland Chinas raised by Mr. Minter are of very choice quality and his prices like those of several other breeders, are very reasonable.

### RIDDING STOCK OF LICE.

Two kinds of lice are ordinarily found on our farm animals, states Prof. Wm. Hislop, Animal Husbandman of the College Station at Pullman. First, the sucking lice and, second, the biting lice. Different species of sucking and biting lice are quite common in the Pacific Northwest.

A. The common sucking lice occurring on animals are: (1) The large headed horse lice; (2) The long nosed ox louse; (3) The large bellied ox louse; (4) Swine lice.

B. The common biting lice that

## Moorefield Baths

Treatment very successful for those afflicted with rheumatic ailments. Rates reasonable. For particulars write or call

W. SPENCER, Mgr.,

7th St. and Pacific Ave., Tacoma, Wash.  
Please Mention This Paper.

are found on domestic animals are:

(1) *Trichodectes pilosus* and *trichodectes pubescens* of horses and mules; (2) *Trichodectes scalaris* of the cow and steer.

Dogs, sheep, goats, cats and chickens may also be infested with biting and sucking lice.

It is generally conceded that the sucking louse is the most injurious and irritating. Generally the animals infested become markedly unthrifty, especially if they are young, or old animals that are not too well cared for. The biting by piercing the hide of the animals causes a marked irritation and prevents the animals from doing well. Usually irritation set up by the biting causes the animal to rub himself and thereby militate against his general appearance. When horses and mules are affected, they usually show a staring, dirty, rough coat and the mane and tail become broken and matted. Constant rubbing against fences, trees and stalls and an attempt to bite its own skin to relieve the irritation will usually indicate that the animal is infested with lice. As the hair is examined, nits (eggs and young lice) will be seen adhering to it. Usually, one finds sucking lice attached to the withers and belly, while biting lice are usually found on the limbs.

If cattle are infested, they act very similar to horses or mules. Usually, the coat becomes dirty and staring and the part affected becomes curled as the result of lick-



ing. Usually one will find the lice along the back and particularly at the tail, head and rump.

Hog lice are commonly found just back of the ears, on the inside of the thighs and along the back. Irritation and itching caused by them are severe and the hogs constantly rub against posts and roll in the mud. Young hogs are particularly susceptible, and do badly when infested. After a time they become very unthrifty if they are not treated.

There is more opportunity for infestation in buildings than in pasture. A preventive method is better than a curative one. All animals infested should be excluded from the general herd at once. It is impossible to rid animals of lice if the buildings in which they are housed are not properly disinfected. The best method to use in cleaning the quarters is to remove all litter and manure from the stable and barns. It should be burned and the walls and floors sprayed with a two or three per cent solution of creolin or lysol. Lime should also be scattered about the buildings and yard. If horses are infested, wash thoroughly with a two per cent solution of lysol. Pay particular attention to the region of the mane and tail where the lice are apt to congregate. This washing should be repeated in about three days. In winter, when it is too cold to wash, one should purchase Keating's Lice Powder and scatter it on the horses' coats by rubbing the hair the wrong way and shaking the powder underneath the hair. This should be done two or three times until the lice are killed. The dipping method, however, is the most certain one to use.

To rid cattle of lice, one should wash them thoroughly with a solution of creolin or lysol in warm water. Use good soap to make a lather and rub it into the hide. As a rinsing water use the disinfectant solution. They should be washed on a sunny day and the animals blanketed after the rubbing, if possible, in order to prevent chilling. It is well to wash them on three different occasions at intervals of eight days. This will make pretty certain that the lice are killed. In winter time one usually uses one part of sulphur to five parts of lard. This is made into an ointment and smeared along the cattle's backs. After it has been on there for two weeks, the animals are washed. Repeat the dose soon after the washing if any lice are still to be found. Mercurial ointment or blue ointment in small doses, when applied back of the ears, along the tail, head and rump is also very good, but do not place this where the animal can lick it.

To rid hogs of lice it is best to run them through a dripping tank containing a two or three per cent solution of lysol or creolin to which an inch to an inch and a half of crude oil has been added. If one has no dipping tank, then simply swab some crude oil along the back of the hogs and behind their ears. The latter method is best during cold weather and is the one commonly used by hogmen.

#### FAT STOCK AND HORSES.

The Cascade International, at North Yakima, will have a splendid ex-

hibit of fat stock. Kraber Bros., of Medical Lake will have a carlot of fat hogs; Cole, of Baker, Ore., winner last year, has a carlot of steers entered, and Frye & Co. will have two carlots. Prior & Son, Coffin Bros. and McGee & McGuffie will have fat sheep entered in the carlot class.

Both sheep and hogs in the breeding classes will be entered in the show in great numbers, filling all the pens set aside for that purpose.

The Silver Birch farms will have entries of Berkshires, and J. A. Simonson, of North Yakima, will be in competition. C. M. Meenack, of Kiesland, will bring Chester Whites. Other entries are promised, but not officially made at this time.

#### Champion Jupers Coming.

The Colony Farm, Essendale, B. C., will send a carload of jumpers to give an exhibition at the horse show. The Portland Riding Club will send a carload of saddle horses and some expert lady riders to put them through their paces. In the breeding classes Lowry of Winchester, Idaho, A. L. Pierce, of Granger, and George Wilson, of Wilbur, Wash., have made entries for the show.

#### DAIRY COW HAND BOOK.

The second edition of the De Laval Dairy Handbook is filled with good practical information and advice to cow owners from cover to cover.

While the various phases of dairying are discussed by the highest authorities, the book is not technical but written in plain, every day language.

Dean Vivian, of the Ohio College of Agriculture, has contributed a splendid article: "The Farm That Won't Wear Out," showing that where cows are kept on the farm and the fertility returned to the soil, the land improves instead of deteriorates. Professor Eckles, of Missouri, an authority, has a splendid article on the importance of the proper feeding of cows at various seasons of the year. Hon. F. D. Coburn of Kansas, the alfalfa expert, has contributed an interesting chapter, entitled: "Alfalfa, the Wonderful," and Professor Plumb, of Ohio State University, has an equally instructive chapter on "The Silo and Silage." Chas. L. Hill, the famous breeder, of Rosendale, Wis., gives four pages of sound advice on "Building Up A Dairy Herd."

Some of the other interesting articles are: "Dairy Cattle Improvement Associations," by Fred W. Merrill; "Ventilation of Dairy Barns," "The Care of Cream on the Farm," by J. D. Jarvis; "The Care of Freshening Cows," by F. H. Scribner, well-known Wisconsin breeder; "Testing Dairy Cows," by Professor Benken-dorf; "How to Judge a Dairy Cow," by Hugh Van Pelt; "Buttermaking on the Farm," by S. E. Barnes; "Legumes for the Dairy," by Professor C. W. Burkett, and numerous tables and other information of practical value to every cow owner.

The De Laval Separator Company, 165 Broadway, New York City, advises that they will be glad to send this Handbook free to any of our readers who write for it.

#### GREAT CATTLE SHOW.

At Cascade International, No. Yakima.



We have and offer for sale a number of Guernsey cows now freshening and young heifers soon to be fresh which are out of imported breeding and their ancestral records show large milk and butter fat production. They were selected from some of the leading Guernsey breeder's herds in the East as calves a couple of years ago. They are acclimated and have developed into full grown cows showing ideal dairy form, well developed udders and are in full health ready for heavy dairy work. These cows are registered and would serve well in any pure-bred foundation herd.

With one or more of these cows any dairyman can get a start in pure-bred Guernseys, the breed which is very popular and profitable.

The Guernseys are good foragers, gentle and their milk is well balanced with a rich golden color not contained in the other breeds. There is a growing demand for this breed, the only drawback having been that the buyers are more than the supply.

Write us for full particulars; also your needs regarding high grade cows for general dairy work, or for pure-bred Holsteins.

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## A YRSHIRES

Premier breeder and exhibitor, Panama-Pacific Exposition. This herd holds six world's records for production. We offer you stock which will make you a profit where others fail.

For particulars write

J. W. CLISE, Redmond, Wash.

**"Short Measure-eh?"**

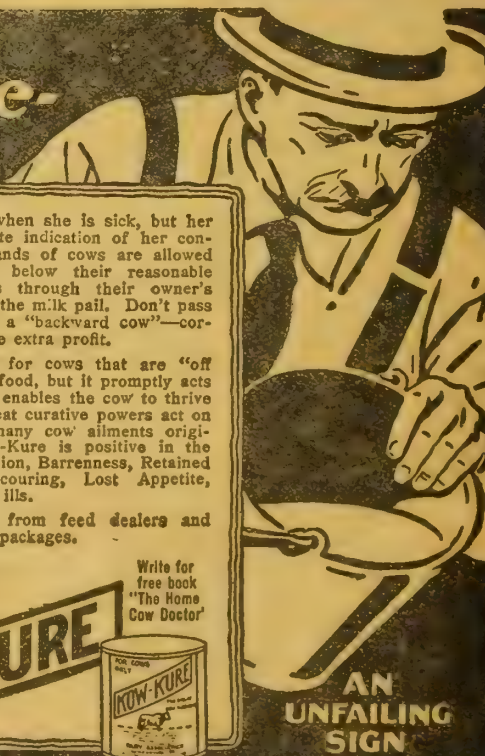
A cow can not tell you when she is sick, but her milk yield is a very accurate indication of her condition. The fact is, thousands of cows are allowed to remain unprofitable or below their reasonable standard of productiveness through their owner's failure to act on the hint of the milk pail. Don't pass it off by simply calling her a "backward cow"—correct the trouble and reap the extra profit.

Kow-Kure is a medicine for cows that are "off color." It is in no sense a food, but it promptly acts on the digestive organs and enables the cow to thrive on her natural food. Its great curative powers act on the genital organs where many cow ailments originate. The success of Kow-Kure is positive in the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Lost Appetite, Bunches and other common ills.

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Write for free book "The Home Cow Doctor"

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PORTLAND, OREGON



During the week beginning November 20th there will be a large show of dairy and beef cattle at North Yakima, where sellers and



buyers meet and where people may learn to know truly valuable live stock.

Geo. A. Gue states in a recent Yakima Republic that leading breeders in Oregon, Washington, Idaho and Montana will consign to this show. In Holsteins are lined up the herds of William Bishop, Chima-cum, Wash.; P. A. Frakes, Scap-poose, Ore.; John L. Smith, Spokane; and H. C. Davis, E. B. Marks and Todd & Sons, of Yakima county.

The Guernseys will be represented by D. L. Looney and Chas. Bros., Jefferson, Ose.

Ayrshires to be represented are the herds from J. W. Clise, Redmond, Wash., and the Domes herd from Oregon.

Among the Jerseys expected is the Smith herd, from Salt Lake, J. B. Stump, Oregon, and Clifford Reed, Oregon, and A. H. Huebner, North Yakima.

#### Beef Types.

The showing in beef cattle will also be equal to the splendid exhibit in that line made last year. Duncan Dunn, of Wapato, and Harry Sommers, of Bozeman, Mont., will again contest for honors with Shorthorn herds. I. K. Cogswell, of Chehalis, and Porter Bros., of Halsey, Ore., will compete in the Red Poll class. The Hereford class will be exceptionally strong, with Henry Thiessen, Sweetwater, Idaho; George Chandler, Baker, Ore.; and A. B. Cook, of Montana, in the show ring together.

Both the Congdon herds of Aberdeen Angus will be at the Cascade show. The senior herd made a clean sweep in the Middle West this year, where it made the circuit and brought away most of the ribbons offered in this class.

#### AVERAGE HOG PRICES.

Does it pay to raise hogs? is the question many a farmer can answer if he knows the trend of the markets, its average for several years, and when he figures what the feed under proper plans of his local farm operation will cost. In the Coast Section hog raising has not increased very rapidly because waste feed outside of fern roots has not been very abundant but in many cases here, as well as east of the Cascade range, some profit could be obtained from hog raising, with proper plans carefully worked out. Swine raising is largely a grazing proposition with some grain to round off at the last stage.

The Portland Live Stock Reporter gives some light on average market prices, which was for top hogs at North Portland from 1910 to 1916, inclusive, \$8.70. The lowest average was \$7.42, in 1915, and the highest, \$10.32, in 1910. No hog feeder will contend that there is not a splendid profit in hogs at \$8.70 per hundred pounds in the Stock Yards, and it is the general average which counts and not the high or low points.

Going into detail, for which a chart is being prepared by the Stock Yards Company, the market in 1913 started off at 8 cents, holding to \$8.25 from the first of February, advancing to \$9.85 in April, dropping back to 9 cents for May and June, going to 10 cents in July dropping

gradually to \$9.60 in September, and closed in December at \$8.10. 1914 started at \$8.20, advanced to 9 cents by March, dropped back to 8 cents in April, went to \$8.65 in May, back to \$8.25 in June, up to \$9.50 in July and August, dropping to \$9.25 in September, gradually going off to \$7.50 in November and December. 1915 started at \$7.50 and held fairly well until March, advancing gradually to \$8.25 in May, following off steadily to \$7.65 in August, \$7.10 in September and October, finishing at \$6.25. 1916 started at \$6.25 and climbed steadily to \$9.35 in March and held at about that price until May, then went off to \$8.75 in June, then advanced close to 10 cents in August, where it held fairly steady through October. The chart shows that the two high points of the year are somewhere along in March and April and again in August and September, one low place being about June and the extreme low price being in December and January.

Some of our readers will benefit by planning to get their hogs ready at the time when the market is at its best.

## POULTRY

### FEEDING FOR EGGS.

Mrs. Geo. R. Shoup, Western Washington Experiment Station, Puyallup, Washington.

The general principles underlying all systems of feeding are:

First—as much variety as possible and an abundance of feed.

Second—Regular times for feeding.

Third—Long enough intervals between meals to insure keen appetites.

With Leghorn pullets there is almost no danger of overfeeding, because of their active natures, but with the heavy breeds it is quite frequently necessary to close the dry mash hoppers by 2 p. m. to make sure that the birds will eat enough grain at the evening feed. By keeping careful watch of the condition of the heavy pullets the amount of easily-gotten feeds can be regulated so that they are made to exercise enough to keep healthy and not too fat.

The following feeding schedule is one that provides sufficient feed not only for egg production but also body growth and cold weather resistance, which latter items are too often overlooked in making a ration.

#### November and December Feeding Schedule.

Maximum for 100 Leghorn pullets when laying from 60 to 70 eggs a day.

6:00 a. m.—Short Sprouted Oats—14 quarts.—Obtained by sprouting 6 quarts dry oats. Fed by artificial light in good clean litter.

8:00 a. m.—Clean water in clean bucket—12 quarts. (Not ice cold.)

8:30 a. m.—Clabbered milk or buttermilk—6 quarts.

3:30 p. m.—Mixed grain—10 quarts. (2 parts wheat to 1 part cracked corn.)

4:30 p. m.—Lumpy wet mash—7 quarts. (Made from egg mash 5 quarts, water 3 pints (see formula), blood 1 pint (fresh).)

Twice a week, fresh cut green bone—2 lbs. (Instead of blood.)



**LILLY'S EGG MASH**

This high protein Egg Mash produces eggs in abundance. It is very high in protein, contains no condiments or other injurious things, and is extremely rich in animal foods and other meats. If you feed Lilly's Egg Mash with scratch food, greens, grit, shell and water, NO MEAT, your hens will then lay plentifully.

SOLD BY DEALERS

USE LILLY'S FOODS ALL THE TIME

4:00 to 4:30 p. m.—(According to weather.) Light lantern.

5:00 p. m.—Fresh water (not ice cold).

7:30 p. m.—Kale—2 large stalks. Fed in racks or hung from roof.

8:30 p. m.—Lights out.

The egg mash (dry), shell and grit are in self-feeding hoppers open all the time.

#### Dry Egg Mash.

For fall and winter use in hoppers open at all times.

Two parts wheat bran; 1 part wheat middlings; 1 part feed cornmeal; 1 part soy bean meal or proteina; ½ part meat scrap or fish meal; ¼ part flake charcoal; 1/6 part sand (the safeguard against indigestion); ¼ part alfalfa meal (to accustom fowls to its taste should green feed run out); 1 part sifted ground oats (where short-sprouted oats are not fed).

This mash may be varied according to special needs. For instance, where there is a shortage of kale, more alfalfa is added. When looseness of the bowels is noticed, more charcoal is added. When constipation shows, more bran is put in, and where fresh blood and green bone are limited more meat scrap is supplied.

Bear in mind at all times that to get from 50 per cent to 70 per cent egg yield during November and December requires the combination of all of the above factors, operating all together at one and the same time, to take egg production out of the realm of uncertainty and establish it on a basis of commercial quantity yield at the will of the owner.

#### POULTRY LICE.

##### Easily Destroyed with Sodium Florid.

Entomologists of the U. S. Department of Agriculture have demonstrated that all species of lice which infest poultry may be quickly destroyed by the application of a very small quantity of sodium fluorid, according to the annual report of the Chief of the Bureau of Entomology just issued. Entire flocks of poultry were cleared of the parasites in this way and were found to remain free when ordinary precautions were taken against reinfestation by contact with infested fowls.

In connection with this work the entomologists of the Department made the first complete studies of the chicken mite and determined that it depends exclusively upon the fowl for its food and will not develop in any stage on filth or similar substances. In tests of a large series of insecticides it was found that a few thorough applications of crude petroleum to the interior of poultry

## Cockerels EGGS

A few choice Brown Leghorns at bargain prices while they last.

From White, Brown and Buff Leghorns and B.P. Rocks; high quality stock.

Single setting or lots.

Write for prices.

FRED A. JOHNSON,

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Tacoma, Wash.

## H. L. BLANCHARD'S POULTRY FARM

BREEDING STOCK FOR SALE  
—Pedigreed Cockerels; S. C. White Leghorns; Barred Plymouth Rocks.

All stock vigorous, healthy and of superior quality, as shown by our trap nest records. Satisfaction guaranteed. Call or write. Prices reasonable.

BLANCHARD POULTRY YARDS  
Chimacum, Wash.

## EGGS BEFORE RIBBONS WHITE LEGHORNS COCKERELS

#### PEDIGREED FOR EGGS

Their dams have records of 200 to 257 eggs in 365 days.

We solicit your patronage for Hatching Eggs, Day-Old Chicks, Breeding Stock. Write for circular giving prices and egg records.  
WESTERGARD & SAEMAN  
BOX H ZENITH, WASH.

## Tacoma Poultry Show

TWENTY-SECOND ANNUAL EXHIBITION

Tacoma, Washington  
DECEMBER 26 to 30, 1916  
Nat C. Luce and Frank W. Breed, Judges.

This show will double all premiums where there are a hundred or more fowls shown to a variety. Best specials offered by any association.

Annual banquet at Tacoma, evening December 29, 1916.

Tacoma Association invites all special clubs to meet with their show. The American Poultry Association Gold and Silver medals are offered at this show.

The Washington State Poultry Breeder's Association makes the State Show and we want to see entries from every member in the State of Washington. Annual meeting held Friday, December 29, 1916. Send for Premium list.

H. F. RAU, President.  
JAMES B. MITCHELL, Secretary.  
Tacoma, Washington

houses will completely destroy the mites which are different insects from the poultry lice.



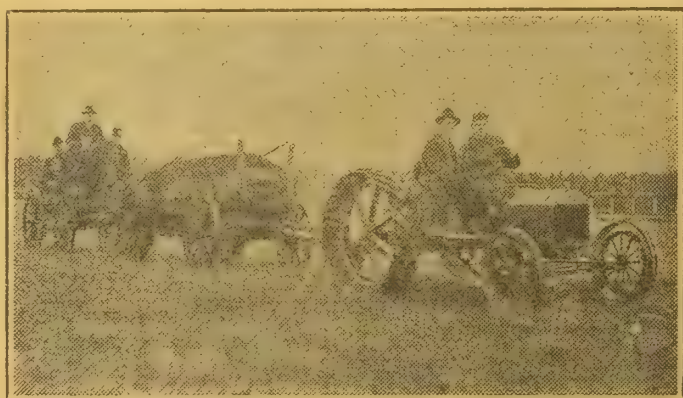
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Universal  
—  
"The  
Modern  
Workhorse"



Satisfaction  
Guaranteed  
or  
Money  
Refunded

Convincing Demonstration Richmore Farm Near Tacoma, Wash.

# This Automobile now does the work of



## FOUR to SIX Horses!

### WHY NOT LET YOUR OLD AUTOMOBILE SAVE MONEY FOR YOU TOO?

By attaching the Universal Tractor Attachment To Your Old Automobile You Have At Once A PRACTICAL FARM TRACTOR FOR

# \$275

Here at last is the machine for which the farmer has been waiting! A practical farm tractor at a price within the reach of all—a powerful farm "workhorse" that can do all the work usually requiring four to six horses, yet costing no more, complete, than one of the horses it replaces.

Government statistics show that it costs \$130.21 per year to keep a horse on the average farm—here are four or six horses combined in one machine that eats only when it is working, never has to stop to rest, can be handled by a boy as well as a man and when not busy in the fields can haul your loads to market or be changed back into a pleasure car with little work. By means of the enormous gear reduction, the power of the car is multiplied TEN TIMES, yet no mechanical changes are necessary—simply take off the body and bolt fast the attachment. Travels on high gear all the time. No more strain on car at plowing speed than at 18 to 20 miles per hour road speed. Think of the saving in feed bills and time! At \$275 no farmer can afford to overlook this opportunity. If you haven't an automobile at this time a used light car can be secured at a very small outlay which will solve the question entirely.

Satisfaction guaranteed or money refunded.

No holes to drill—No mechanical changes to make—No special tools necessary—Anybody can attach it in a very short time—Simple to operate—Practically indestructible—Easily changed back to pleasure car.

**Read what the Universal will do on the farm.**

Will pull two-bottom plow—spring tooth harrow—road drag—manure spreader—loaded wagons—in fact any work usually requiring four to six horses.

Will not pack the ground—will not damage the road.



We are already oversold on production. In order to insure prompt delivery fill out the coupon and mail it AT ONCE.

**GERLINGER MOTOR CAR COMPANY**

Manufacturers of  
UNIVERSAL TRACTOR ATTACHMENTS  
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Tacoma, Washington.

### AGENTS WANTED

There is still some good territory available. We are willing to pay a liberal commission to live energetic men who will represent us. Write today to Dept. "T" for our special agency proposition.

Fill out this coupon in full and MAIL TODAY

GERLINGER MOTOR CAR CO.,  
TACOMA, WASH.—  
GENTLEMEN:—

I am interested in your Tractor proposition. I am farming .....  
acres of ..... land and have ..... horses. I have a  
(kind of soil)

..... automobile Model ..... year .....  
and would like to have detailed information regarding the UNIVERSAL  
TRACTOR ATTACHMENT and how it could make this machine  
SAVE ME MONEY.

Name .....

Town .....

N. W. H. County ..... State .....



## High Mark For Holsteins Set At Portland

The Pacific International Livestock Show at Portland this month was one of the best in the history of the association, both in quality of the entries and attendance.

Dairy cattle showed up very well and came in for their full share of attention. Holsteins were a high quality lot, among the breeders being represented being Wm. Bishop, of Chimacum; W. K. Newell, of Seghers, Ore.; A. E. Smith, of Sumas, Wash.; P. A. Frakes, of Scappoose, Ore.; Albert Johnson, of Scappoose, Ore.; E. B. Marks, of North Yakima, Wash.; John Heffron, of Sunnyside,

shires, Poland Chinas, Durocs and Chester Whites being represented.

The sensation of the Holstein sale held on Friday, came when FINDERNE Mutual Fayne Valdesa, a yearling bull, was bid in by J. E. Von Herberg, of Seattle at \$21,500. This animal, with breeding back of him that made the biggest Holstein men of the Northwest, run him up into a five-figure price, was consigned by Bernhard Meyer, of FINDERNE, N. J. This bull's dam is FINDERNE Mutual Fayne, who made a world's record as a junior two-year-old, and he is grandson of the \$15,-

acum, Wash., \$175.

Segis Pontiac Homestead, calved April 19, 1915; Charles S. Mead, Zillah, Wash., \$140.

Inka Pontiac Wayne, calved July 19, 1915; John H. Scott, Salem, \$125.

Mohee Pontiac, calved April 21, 1915; P. A. Frakes; E. E. Fisher, \$125. Ormsby Segis Korndyke, calved December 10, 1914; George Gue, North Yakima, \$205.

Princess Easle de Kol Piebe, calved August 15, 1915; E. E. Fischer, \$125.

Highland Johanna Girl, calved December 18, 1908; John L. Smith, Spokane, \$250.

Josie Clothilde Korndyke, calved August 26, 1915; Mt. Angel College, Mount Angel, Ore.; \$175.

Cornucopia Netherland Princess, calved April 5, 1914; E. J. Glenger,

Miss Madcap Johanna Fayne, calved January 6, 1916; H. C. Davis, \$150.

Lady Captolia Pledge; Mount Angel College; \$250.

Island Prilly Blossom, calved May 26, 1915; John Gearin, Aurora; \$170.

Countess Lill de Kol Segis, calved September 20, 1915; L. L. Paget; \$115.

Lady Johnson de Kol Homestead, calved October 12, 1915; Charles Ashton; \$130.

Johanna Oregon Girl, calved October 23, 1914; Lewis Snider, Warren, Ore.; \$205.

Johanna Oregon de Kol, calved September 15, 1916; Charles Ashton; \$105.

Highland Pontiac Johanna, calved December 18, 1914; G. A. McCart; \$290.

Dark Beauty Veeman Pietertje, calved December 25, 1911; C. S. Magee, McMinnville; \$305.



FINDERNE MUTUAL FAYNE VALDESSA

The ten months old Holstein bull calf bought at Portland by J. G. Von Herberg of Kent, for \$21,500

Wash.; H. S. Manion, of Vancouver, Wash.; David McKeown, of Gresham, Ore.; Simmons Bros., of Ridgfield, Wash.; Walter Zetzman, of Cornelius, Ore.; Hugh Nisbet, of Chimacum, Wash., and George Gue, of North Yakima, Wash.

Jerseys formed a small class, but the Reid Farm stock from McMinnville and that from the Dammier Farm at Gresham made an excellent showing.

Guernsey classes were well filled by A. L. Gile, Chinook; D. H. Looney, Jefferson; A. L. & J. Hughes, Oregon City; W. A. Goodin, Cornelius, and the Dupee Farm in California.

The swine show was good, Berk-

000 bull Spring Farm Pontiac Cornucopia.

The consignors were Albert Johnson, P. A. Frakes, Scappoose, Ore.; W. K. Newell, Seghers, Ore.; J. H. Windle, St. Johns, Ore.; Walter Zetzman, Cornelius, Ore.; Hugh Nisbet, Wm. Bishop, Tom Yarr, Chimacum, Wash.; E. B. Marks, John Heffron, North Yakima, Wash.; C. W. Simmons, H. A. Simmons, Ridgfield, Wash., and Frank Haberlock, Oregon City.

Geo. Gue and Harry Kranke were the auctioneers.

The list of sales follows:

Sadie Colantha Pontiac, calved November 28, 1913; William Bishop, Chim-

Tillamook; \$180.

Lucy Longfield, calved October 12, 1910; Donnybrook Farm, Bothell, Wn.; \$320.

De Kol Artis Clothilde Queen Second, calved March 26, 1910; Donnybrook Farm; \$355.

Heifer calf, calved August 7, 1916; George A. McCort, Harrisburg, Ore.; \$145.

Johanna of Holstein Home, calved July 3, 1911; Charles J. Lee, Alpha, Wash.; \$225.

Ida de Kol Homestead, calved February 22, 1909; N. Christensen, Oregon City; \$130.

Calf of Johanna of Holstein Home; C. Rebischer, Sherwood; \$105.

Calf of Johanna of Holstein Home; R. C. Davis, Granger, Wash.; \$110.

Wapato Narcissus Hengerveldt de Kol, calved August 26, 1909; George Brazelton; \$110.

Dark Beauty Veeman de Kol, calved October 19, 1915; S. M. Price, Rainier; \$115.

Queen Hengerveld Veeman de Kol, calved November 6, 1915; Mrs. M. A. Haupt; \$150.

Highland Meta Veeman, calved September 24, 1916; Charles Ashton; \$105.

Meta Veeman Pontiac, calved November 11, 1913; H. W. Vanderhoof, Sumas, Wash.; \$260.

Highland Veeman de Kol, calved October 24, 1915; G. D. Shafer, Vancouver; \$140.

Highland Parteneza Veeman, calved September 16, 1908; H. W. Vanderhoof; \$510.

Parthenea Veeman Pontiac calved October 26, 1914; H. W. Vanderhoof; \$305.

Highland Homestead de Kol, calved

Continued on page 259



# Cranberries Yield Good Profit on North Beach Peninsula

Cranberries are yielding good profits for a number of growers in Southwest Washington. An interesting report was recently given by M. C. Harris, of Hoquiam, who visited the North Beach Peninsula.

"Several of the bogs in the district were visited," said Mr. Harris, "the first being that of Merdock & Rounds, four acres in area. The plants were two and one-half years old and were yielding 25 barrels per acre. Twenty barrels per acre for bogs of this age is considered excellent. Pickers are paid about 15 cents per peck and make from \$1.75 to \$2.50 per day, picking cost being about \$2 per barrel. This expense will be greatly reduced later by the use of scoops with comb-like teeth which may only be used when the bogs are older and have been submitted to cultivation and pruning. At present many of the

pickers are women, but Filipinos and Japs are used to some extent.

"Older bogs visited were yielding as much as 125 barrels per acre. As the present quotation is \$8.25 per barrel, owners of older bogs are already realizing handsome returns. None of the cranberry farms are old as such, however, and as they are perpetual so long as well tended the culture is very profitable. The total cost per acre of planting and caring for a bog until bearing is from \$600 to \$700.

"H. M. Williams, of Cranmoor, near Ilwaco, has interested himself most extensively in the business. He is an experienced grower from Maine and has several hundred acres in cultivation with 35 pickers now at work and more needed. After picking the berries are sorted, to remove over-

ripe and otherwise defective ones, graded as to size by passing over slatted openings, and packed for shipments. The crop is in ample demand.

"Mr. Williams has demonstrated that the cranberry is as useful in other ways as those commonly known. By running the berries through a cider mill and press he gets a juice which, if kept in an airtight receptacle, remains unfermented, and when mixed with a third water and sweetened to taste is a delightful and harmless beverage. By seasoning and spicing the pulp, he gets a very pleasing catsup. By allowing the juice to ferment, vinegar of a splendid quality results. And by a drying and grinding process a powder is obtained of which a thimble full will make two cranberry pies or a cranberry cake.

"And speaking of the cake calls to mind the fact that these folks have developed many ways of using their berries, new to most housewives. Raw berries ground through meat choppers with one-third sugar added are delicious and keep indefinitely. We were served some treated in this manner a year ago.

"The growers of this section work together to their advantage in marketing, having an association for the purpose. They are now planning to erect a fine warehouse. From the brief opportunity afforded by this hurried trip, it is certainly highly to be desired that such land in the Grays Harbor country as is suitable to cranberry growing, and there is a lot of it, should be developed at the earliest possible time. A fine start has been made by Messrs. Benn and Carman and their associates."

# Testing Increases Value of Walla Walla Dairy Herds

## WALLA WALLA RECORDS.

By O. V. Patton.

Much improvement towards keeping better cows has been made during the past year by the members of the Walla Walla Valley Cow Testing Association. This is very plainly shown by comparing the association figures for November, 1915, with those for November, 1916.

Average of 346 cows, November, 1915—Milk, 500 lbs.; butterfat, 23.3 lbs.

Average of 343 cows, November, 1916—Milk, 594 lbs.; butterfat, 26.5 lbs.

The average milk production per cow for the month has been improved nearly 100 pounds and the butterfat production 3.2 pounds. This has largely been brought about by the elimination of the poor producers which were detected through the work of the association.

The records made by good producing cows in the association greatly add to the value of the animals when offered for sale. Verner Brown just sold 17 head of grade Guernseys to Swegle Brothers for \$100 per head. Before joining the organization Mr. Brown would have taken \$70 per head, but at the end of the year his herd record book showed that his herd averaged 346 pounds of butterfat per cow.

On the Honor List for this month there are 38 cows as compared with 28 for the same month last year, or an increase of 3 per cent. of the total number of cows tested that produced over 40 pounds of butterfat for the month.

The Honor List of cows that produced over 40 pounds of butterfat for the month of November, as submitted by the official tester, Mr. Lee C. Lewis is given herewith and makes a very creditable showing.

Highland Dora Veeman, a registered Holstein, belonging to the Walla Walla College, heads the Honor List this month, with 88.8 lbs. of butterfat. The Walla Walla College herd consists entirely of purebred Holsteins and the average production per cow for the past year was 414 lbs. of butterfat. They have just completed an official test and qualified for Advanced Registry. The College had four cows in the Honor List last month.

A four-year-old grade Guernsey, belonging to Verner Brown, is second on the list with a production of 72.8 pounds of butterfat produced in 30 days. Mr. Brown also has a five-year-old that produced 55.1 pounds.

One rather exceptional record appears this month. A Jersey owned by Mr. C. R. Watt produced 44.6 pounds of butterfat from only 570 pounds of milk. Her test was 7.8 per cent.

A summary of cows producing bet-

ter than 30 pounds for the month follows: Between 30 and 40 pounds, 80 cows; between 40 and 50 pounds,

27 cows; better than 50 pounds, 11 cows; total over 30 pounds, 118 cows; total tested, 343 cows.

## MONTESANO RECORDS.

By C. F. Monroe

Some figures have been compiled from the herd summaries of the various herds in the Montesano Cow Testing Association that will likely be of interest to the general farming public, as well as to the members of the association.

Of 313 cows that finished the year's work in the association, the average produced 6,201 lbs. of milk and 263.4 lbs. of butterfat. For \$1.00 expended for feed this average cow returned \$1.86, producing one hundred lbs. of milk at a feed cost of 90c and one lb. of butterfat at a feed cost of 20c. As compared with this average, we find herds returning from \$1.05 to \$2.72 per dollar expended for feed. Milk was produced at feed costs ranging from 66c to \$1.32 per cwt. Butterfat was produced at feed costs from 15c to 37.5c per lb. These comparisons are based on the uniform rate of 34c per lb. for butterfat and the average market price for feed. It should be noticed that the costs here given are not the entire cost of production for milk and butterfat respectively, only the feed cost. No account is taken of interest, depreciation, labor or risk, which items should almost if not quite equal the feed cost. While these figures are only herd averages yet each member has the same figures available for every cow in the herd that completed the year's work and can use them in culling out the least profitable individuals. These same costs and returns were grouped according to whether or not the owners of the herds had silos and fed silage during the year.

The tabulation of these figures follows:

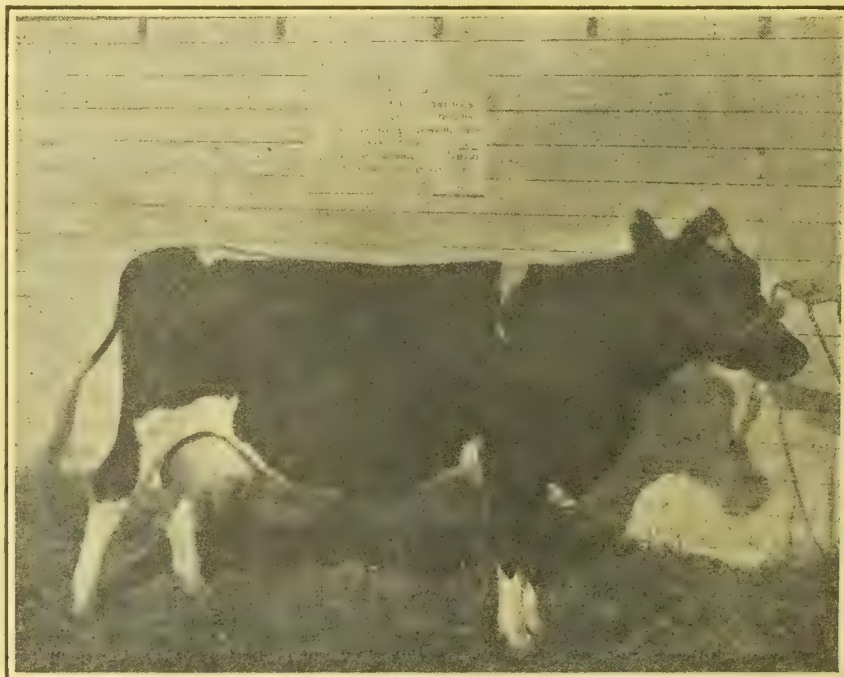
Average of 12 herds fed silage: Returns for \$1.00 expended for feed, \$1.95; feed cost per cwt. milk, 90c; feed cost per lb. butterfat, .249c.

Average of 9 herds not fed silage: Returns for \$1.00 expended for feed, \$1.62; feed cost per cwt. milk, \$1.09; feed cost per lb. butterfat, .p49c.

It would be incorrect to state that the entire difference noted above was due to the silage in ration. However, no one can successfully dispute the fact that the use of silage has had a marked influence on the returns, because both high and low producing herds are found in each group.

There also seems to be a definite relation between the amount of grain fed and the returns. Taking the cost of the grain fed as an index of the amount used we find that it varies from 3 per cent to 59 per cent of the cost of the entire ration with an average of 25 per cent. The following table shows the benefit of feeding a larger proportion of grain than is the usual practice:

Average of 10 herds where cost  
Continued on page 258



A GOOD PRODUCER

This cow is one that has been in the Skagit County Testing Association, and has produced butterfat at a feed cost of 10 cents per pound. Her six-months milk record was 5,617 pounds, with 170.6 pounds butterfat, valued at \$54.59.

## COWS IN THE FORTY-POUND CLASS AT WALLA WALLA

| Owner—                    | Breed    | Pounds of Milk | Pounds of B. F. |
|---------------------------|----------|----------------|-----------------|
| Walla Walla College ..... | Holstein | 2400           | 88.8            |
| Verner Brown .....        | Guernsey | 1124           | 72.8            |
| State Penitentiary .....  | Holstein | 1260           | 70.5            |
| Walla Walla College ..... | Holstein | 1833           | 62.3            |
| State Penitentiary .....  | Holstein | 1770           | 62.0            |
| State Penitentiary .....  | Holstein | 1740           | 61.0            |
| Walla Walla College ..... | Holstein | 1788           | 60.8            |
| State Penitentiary .....  | Holstein | 1740           | 59.2            |
| Verner Brown .....        | Guernsey | 1080           | 55.1            |
| Burbank Company .....     | Holstein | 1179           | 51.9            |
| E. C. Burlingame .....    | Holstein | 810            | 51.8            |
| M. B. Signs .....         | Durham   | 975            | 48.8            |
| State Penitentiary .....  | Holstein | 1356           | 47.5            |
| Lon Sheldon .....         | Jersey   | 1026           | 47.2            |
| State Penitentiary .....  | Durham   | 1000           | 47.0            |
| Burbank Company .....     | Jersey   | 753            | 46.7            |
| State Penitentiary .....  | Holstein | 1728           | 46.7            |
| Lon Sheldon .....         | Jersey   | 984            | 46.2            |
| Burbank Company .....     | Holstein | 1110           | 46.6            |
| State Penitentiary .....  | Holstein | 1798           | 45.9            |
| Burbank Company .....     | Holstein | 1236           | 45.7            |
| O. S. Reeves .....        | Jersey   | 810            | 45.3            |
| Burbank Company .....     | Holstein | 1245           | 44.8            |
| C. R. Watt .....          | Jersey   | 570            | 44.6            |
| Burbank Company .....     | Holstein | 1000           | 44.0            |
| Burbank Company .....     | Holstein | 975            | 43.9            |
| Walla Walla College ..... | Holstein | 1317           | 43.5            |
| O. C. Plaquet .....       | Jersey   | 915            | 43.0            |
| E. C. Burlingame .....    | Jersey   | 870            | 42.6            |
| Swegle Brothers .....     | Jersey   | 924            | 42.5            |
| Chas. Baker .....         | Jersey   | 906            | 42.4            |
| Burbank Company .....     | Holstein | 1056           | 42.2            |
| O. S. Reeves .....        | Jersey   | 900            | 41.4            |
| Lon Sheldon .....         | Jersey   | 900            | 41.4            |
| Burbank Company .....     | Jersey   | 660            | 40.9            |
| State Penitentiary .....  | Holstein | 1260           | 40.3            |
| State Penitentiary .....  | Holstein | 1086           | 40.2            |
| E. C. Burlingame .....    | Jersey   | 800            | 40.0            |



# Apple Men Discuss Pruning at Spokane

The conference of orchardists held in connection with the apple show at Spokane was well attended and added a most interesting feature to this event.

A topic that everybody was interested in was that of pruning, and two excellent addresses were delivered by J. R. Magness and C. I. Lewis of the Oregon Agricultural College. Mr. Magness said that the object of pruning was to contribute to the development of "a strongly built tree with a good fruiting season, well exposed to light and vigorous enough to produce a good crop of fruit year after year." He said that no hard and fast pruning rules can be laid down for all orchards.

"During the first two or three years building the framework of the tree for strength and form is the most vital consideration," said Mr. Magness. "Stockiness, or the greatest diameter in branches and trunk, is of the greatest importance. Winter pruning gives a stocky growth, while still keeping the crotches close together. Consequently, it should be the main type of pruning given during the early years.

"By the time the trees are three to four years old we are becoming interested in getting a fruit spur system in the tree. The trees should begin to bear within a couple of years after this, and the fruiting machinery must be provided. Trees that are making the amount of growth usually found on trees in this section of the country must be headed very heavily during the winter, if only winter pruning is given, to keep them compact and strong. This heavy heading back removes most of the buds available for spur formation, consequently it may be recommended that such trees be given an early summer heading back and thinning out. Such treatment will give two seasons' form in a single year, increase the number of fruit spurs and increase the size of the tree. While there will be some tendency to reduce the diameter of the shoots, this tendency will be slight on trees of this age, because of the relatively small proportion of the total leaf area removed.

If the trees are stocky and vigorous this will do little harm.

"If our trees have reached an age of five or six years, and are not making such long shoot growths that very heavy heading is necessary, but are producing thick top growth, it is often best to practice summer thinning. This will open up the tree, let light down to the leaves on the inside and through the leaves strengthen the buds in that region. Unless the thinning is excessive the growth of the tree in thickness will not be seriously checked, because the leaves remaining will function better with the increased light.

"Another type of summer pruning which is receiving much attention in the Northwest is a heading back or thinning out, or both, about the time length growth stops. This pruning is usually given on trees that already have a good spur system established.

"The pruning is done late enough that little or no growth will be made following it. This is at the time terminals are fairly well formed on the shoots. Some leaves are removed, but a proportionate amount of wood is removed with them, and since no secondary growth occurs, the elaborated food in the remaining shoots is not lessened. It is claimed that this pruning will cause strong buds, thicken the shoots and at the same time lessen the tendency of the tree to make such a strong growth the next spring, such as would be induced by a similar winter pruning. These contentions seem to be well founded. If the pruning is so timed that no secondary growth is made, the buds in the region of the pruning cut will certainly be strengthened, and a thickening of the shoots will occur."

Prof. Lewis said that winter pruning is an aid to developing vigor and he recommended that orchardists should study the bearing habits of their trees in order to understand the influence of winter pruning on fruit development.

"For example," he said, "those varieties which generally do not bear on terminals or on auxiliary buds, but which develop largely on spurs,

do not as a class, tend to be heavy annual bearers. These include such varieties as Arkansas Black, Baldwin, Spitzenburg, Newtown and Rome. How essential it is, therefore, with this class that every encouragement be given to bring about strong spur development, for if we do not, some of these varieties may only bear once in three or four years. Other varieties tend to bear on auxiliary buds and terminals as well as on spurs, and some tend to bear on very young spurs. These include such well known varieties as Jonathan, Winesap, Ben Davis, Gravenstein and McIntosh. Such varieties tend to bear annually.

"In pruning trees in the winter the pruning naturally takes the form of either a heading back or a thinning out, or possibly a combination of the two. If one desires simply some strong sprouts, then heavy heading back will produce that result; but if one really desires more fruit development of spur and bud, then a moderate heading back would be much superior, since you would cut off a much smaller number of buds and spurs and would not discourage the formation of a large number of new ones which might be true in the heavy heading back. In the same way, heavy thinning out is only a question of mathematics; it removes a much larger number of bearing organs, such as buds and spurs, than would light thinning, and a combination of light heading and thinning will probably generally produce the best results. However, I believe that many of our orchardists tend to head back too severely in the pruning of their trees.

"If we combine summer and winter pruning we find they are really supplementary of each other. For example, if the June pruning consists largely of heading back, the winter pruning consists of thinning out and vice versa. Let us consider a few specific instances. We will take first young trees from six to eight years of age which naturally should be coming into heavy bearing. One must avoid over-stimulating such trees by heavy pruning. The

chances are these trees could be handled the best by a possible heading back in June, followed by a moderate thinning out in winter—or should they be in that condition that a thinning out is desirable in June then possibly a little more thinning out or moderate heading back in winter would be desirable. In some cases these young trees get in such condition the latter part of July that a little thinning out, or even heading back, is very desirable, allowing more sunlight and air to reach the buds and spurs which would probably encourage them to become stronger, and probably stimulating less secondary growth than may be true with winter pruning.

"After the trees once reach heavy bearing they will stand much more pruning. Let us consider the great class of trees which most of us are beginning to handle in the Pacific Northwest now — trees which have reached maturity and are in full bearing. With these trees winter pruning becomes to a large extent a thinning process. That is, it aids in reducing the number of specimens a tree might produce so as to encourage desirable commercial size of fruit. We should study these trees so as to keep a balance between the main branches, and we must constantly seek to avoid weak forks which will lead to fatal breakage. We must grasp firmly one principle of pruning in handling these trees, namely, that the greatest response in pruning comes from a region in close proximity to the point where the cut is made. If this principle is true, and it is easy to demonstrate that it is, why then the wise method of handling the tree would be to distribute the pruning as generally all over the tree as is consistent, planning that in our system of pruning all parts of the tree will become reinvigorated; perhaps not all in one given year, but certainly within a period of a few years. Every portion of the tree must be reached. If you do not do this, sooner or later, all the fruiting portions of the tree will be at the top and outside."

## Buttermakers Convention Held This Month at Seattle

The annual convention of the Washington Creamery Operators' and Buttermakers' Association was held at Seattle on December 15, with a good attendance.

One of the important papers was that on "Butter Standardization," by G. E. Frevert, of the Oregon Co-operative Dairy Exchange, of Portland.

"In order to make a standard butter, of course, a standard must first be set," said Mr. Frevert. "This should include, to my notion, not only the commercial score and the method of manufacturing, but especially the composition. I believe that the average buttermaker has given comparatively little study to the control of composition, aside from moisture, and many have very vague ideas as to the factors which influence the moisture content of the butter.

"I hardly consider it necessary to call your attention to the need for standardizing the composition of butter of the factories on the Coast. Since we have come to the point where we are exporters rather than importers of butter, the need of the uniform standard is very apparent. Where butter from various creameries is placed together for car lot shipments to the East, a much better result can be obtained if the butter has the proper composition and is uniform in composition and color, than would otherwise be the case. The increased production all up and down the Pacific Coast is greater than the increased consumption, and since the Coast country is

so well adapted to dairying, the production should and will increase even more rapidly than in the past. This means that there will be more and more money on our markets and unless the butter thus accumulating is of a quality and of a fairly uniform standard so as to create a demand for itself in the large Eastern markets, it will not be so profitable to export it as should be the case. In case this is not done, the accumulation of butter varying in composition and quality on our Coast markets, must necessarily bring our markets to a lower level and retard the growth and development of the dairy industry which should be one of our leading industries on the Coast.

"Now the question most vital to us at present, is how to standardize our butter. It is very evident that co-operation of the creameries and perhaps some sort of an organization among them, would be necessary in order to accomplish the purpose. My suggestion in regard to this would be, that associations be formed similar to our cow testing associations. The association could then hire a man to act as their tester, as the cow testing association does. The duties of this tester would be to test the sample of butter from each churning of the creameries that are members of the association. The samples should be taken and sent to the testing laboratory, which should be centrally located. These samples should be sent by mail or express in screw cap jars, such as are frequently used for cream test samples.

"The tests should include per

cent of moisture, salt, shade of color and if possible per cent of curd. I would suggest a score card on composition similar to the one used at the Northwest Dairy Products Show last year at Spokane, which has the following scale of points: Color, 35; salt, 30; moisture, 25, and curd, 10. At the end of each month the testers report should show a condensed record of each member creamery's standing. These records would be an incentive to the butter-maker to do his best on every churning to have it conform to the set composition and color standard of the association.

"The question of setting a standard of composition and color for the association members to strive toward is of considerable importance. Of course, the market for which the butter is intended, would have some influence in determining that standard, especially in regard to color and salt.

"The cost of a membership in such an association would be comparatively small, as the tester could by systematic work analyze from 50 to 100 samples of butter a day. Such a tester could no doubt be secured at from \$75 to \$100 per month. The laboratory could be in connection with some creamery where steam and hot water are available. The necessary equipment for the laboratory, as well as supplies, would not amount to a very great deal. I would think that from \$100 to \$125 per month would about cover the running expenses of the association. This, of course, should be apportioned among the members according to the approximate number of churnings made

in the member creamery per month.

"Besides standardization of the composition and color, an association such as I suggest, should also standardize its methods of manufacturing the butter in the various plants so that similar results may be obtained as to texture and flavor as well as keeping quality of the butter. For this purpose, I would suggest the following:

"First. Neutralize with soda or lime when necessary so that all cream will be churned at an acidity of 2 per cent.

"Second. Pasteurize all cream as soon after it has been received at the creamery as possible by the vat method holding at 140 to 145 deg. F. for 20 minutes.

"Third. Churn within three hours after the cream has been cooled from pasteurization to churning temperature.

"Fourth. In case starter is used, add it at once after pasteurizing, giving it not to exceed three hours in the cream previous to churning.

"Fifth. Pack butter in a neat uniform package to conform to the market in which it is to be marketed, and fill packages so as to contain a uniform amount of butter.

"I feel certain that the suggestions herein contained, or some similar plan of organization, is essential in order to standardize the butter of your state and to get the best results in marketing."

S. S. Morse, of Montesano, talked on "Profitable Creamery Sidelines." He said that "Cheese may or may not be profitable according to the

Continued on page 258



Established 1887

# NORTHWEST HORTICULTURIST

## AND DAIRYMAN

Oldest Farm Paper in Washington

Published Monthly by

The Horticulturist and Dairyman Co.  
511 Chamber of Commerce Bldg.  
Tacoma, Wash.

C. S. WHITMORE ..... Editor

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H. L. Blanchard, Poultry and Dairy.  
J. L. Stahl, Horticulturist.  
S. B. Nelson, Veterinarian.  
A. B. Nystrom, State College, Pull-  
man, Wash.

## CHANGE OF OWNERSHIP.

After twenty-seven years' service as publisher of the Northwest Horticulturist and Dairyman, C. A. Tonneson has been compelled to retire on account of ill health, and the ownership of this paper passes to The Horticulturist and Dairyman Company, who will endeavor to give the industry which it represents a publication that will merit a continuation of the friendship and the support which it has had in the past.

Mr. Tonneson desires to take this opportunity to express his appreciation of the loyal support that was given him, and which enabled him to bring this paper to the place it occupies with its readers. Twenty-seven years is a long time in the farm paper field in this territory, and for a publication to reach its twenty-ninth year with only one change of ownership is a very creditable record.

The effort of the new management will be devoted especially to making a paper that will be of interest to those farmers who have problems that are peculiar to certain branches of the farming business. The Horticulturist and Dairyman will keep to its own special field.

C. S. WHITMORE.

## COLLEGE EXTENSION WORK.

At the farm schools held throughout the State by the extension department of the State College, Professor J. N. Price has reviewed in the most interesting manner the work of this department of the college, pointing out the practical value of this new phase of agricultural education throughout the community and the State. Every district has been reached by some branch of this work.

Sixteen cow testing associations have been organized with over 350 members and over 8000 cows. The department has assisted in erecting over 300 home-made silos and the emphasis which has been placed on the value of silage has increased the number of silos to a very large extent all over the state.

They have organized 843 Boys and Girls Clubs, with 17,734 members. The net returns of these clubs at selling prices for 1915 will total over \$100,000.

During the last year representatives of the college have visited 7570 farmers on their farms to help them work out their farm problems.

Thirty-eight thousand letters have

gone out from the extension service office.

There are now twelve county agriculturists serving 13 counties. The total cost of these 12 county agriculturists was \$40,190, of which the State College and United States Department of Agriculture paid \$17,000. The returns to the farmers of these counties can hardly be estimated.

In Spokane county the increased returns to the farmer from the introduction of peas as a crop on summer fallow has been estimated at \$500,000.

The drainage districts organized in King County have increased the value of the 8000 acres in these districts to the extent of \$120,000. The diking districts organized in Wahkiakum County has reclaimed 8000 acres of land with an estimated value of \$150,000 and increased the agricultural land of the county three-fold. The effective work of the county agent of Walla Walla County on the codling moth alone saved to the farmers of that county \$100,000.

The organization and successful operation of the Kennewick Berry Growers' Union increased the net returns to the berry growers to the extent of \$34,420 without any increased cost to the consumer. This same organization is also marketing potatoes and live stock.

## THE NET EARNINGS.

Another year is drawing to a close. Where does it find you? It is not so much a question of how much money we have made or what kind of clothes we are wearing now as compared with a year ago—these are minor considerations as compared with the one vital issue—how much real, genuine pleasure have we brought into our lives by following the Golden Rule.

Every year seems to add another burden to our already overly commercialized existence. Sometimes it seems impossible for us to pay attention to anything but the dollar chase, and our lives, instead of being filled with the peace and contentment supposed to prevail in rural communities, are given over to strife and turmoil.

In the cities the stores and factories are closing their books for the year and figuring out what their net earnings have been. Let us do the same thing—figure out where we have lost and where we have gained in our effort to live timely, helpful, happy lives. After we have done that we can see our shortcomings and make plans which will help us over the hard places of another year.

We are like one big family—we folks in the country—and if we live each one for himself, without regard for the other fellow, the humdrum of farm life, of which we hear occasionally, will ever be with us.

## CONSIDERING MR. HI.

After the various food commissions, in the investigation of the high cost of living, get thru swatting the middleman, who admittedly is not entirely blameless, maybe they will administer a well merited rebuke to the hen that goes four-flushing around singing and cackling, eating regularly, but never laying an egg, says the Tacoma News. Certainly such conduct does not tend to keep

the price of eggs where an occasional one for breakfast is not an unwarranted extravagance. It might be pertinent, also, to inquire into the motives of the cow, whose milk production falls below the normal average when she is compelled by her owner day after day to seek shelter from winter storms in the lee of a wire fence. Reducing the milk supply is equivalent to increasing the demand, and the market experts tell us increased demand always makes higher prices.

Plainly the work of the experts on the food commissions does not lie entirely with those who stand between the producer and the consumer. The question of the high cost of living is one of many intricacies, and its ramifications offer splendid opportunity for those of an inquiring turn of mind. They may lead not only to the hen roost and cow lot, but to the hog pen also, for be it known that many hogs, after a few winter nights in a bed of cold mud, show a decided shrinking in size and quality of hams and bacon sides.

Verily, the investigators have taken unto themselves a full sized job. May they not become weary in well doing.

## THE HIGHWAY

The question of highways has engaged the attention of President Wilson, and one phase of the subject as set forth by him is well worth careful thought.

"My interest in good roads," he says, "is not merely an interest in the pleasure of riding in automobiles. It is merely an interest in the very much more important matter of affording the farmers of this country and the residents in villages the means of ready access to such neighboring markets as they need for the economic benefit, but it is also the interest in weaving as complicated and elaborate a net of neighborhood and State and national opinions together as it is possible to weave. It is of the most fundamental importance that the United States should think in big pieces, should think together, should think ultimately as a whole, and I feel, in my enthusiasm for good roads, something of the old opposition that there always has been in me to any kind of sectional feeling, to any kind of class feeling. The reason that city men are not more catholic in their ideas is that they do not share the opinions of the country and the reason that some countrymen are rustic is that they do not know the opinions of the city and they are both hampered by their limitations. I believe that the development of great systems of roads is, psychologically speaking as well as physically speaking, a task of statesmanship. I believe that it is the proper study of the statesmen to bind communities together and open their intercourse so that it will flow with absolute freedom and facility."

## EDUCATING FARMERS.

In a communication to the Seattle Post-Intelligencer, O. L. Miller manifests great concern over what appears to him to be a lack of educational facilities for the farmer.

"Neither cheap land nor cheap

money is of any value whatever to a man cultivating the soil who does not know how," writes Mr. Miller. "It is a waste of money and energy to attempt agricultural work in Western Washington without a course in agriculture. A good lecture once in a while won't do. I am satisfied that, if the proper time and energy were put into teaching farmers how to get profit out of their ranches, it would mean double the output of the land and cut a big figure in the high cost of living. Before the farmer can cultivate the soil he must cultivate his brains. While they are establishing a system of clearing logged-off land they should establish an educational system along with it."

It might be interesting to know just how far Mr. Miller would go with whatever system he may have in mind.

With the services of our state colleges and experiment stations and of the federal department of agriculture available to all through extensive work, it would seem that there is no serious cause for complaint just at this time.

## Opinions of Others

## THINK.

Do you consider your fall season's business profitable and satisfactory? If not, why? If it was, why? Where did you fall down and where did you make good? Is the expenditure side too big or too little? Whoever heard of expenditures being too small? Let us analyze what goes into expenditures. Stock—did you buy sufficiently and intelligently to cover the wants of your patrons and was that stock of such high quality as to secure you against loss? Labor—did you spend sufficient for labor that your place might be kept in the highest state of cultivation so as to produce the maximum in quality and growth? Fertilizer—did you manure heavily enough that next season will find the soil in good productive condition? Packing and Delivery—Did you spend sufficiently on materials and labor that your stock reached your customer in excellent condition and avoided complaints from this source? Advertising—Did you spend enough to let the buying public know what you had to sell and why they should buy from you? Office—Did you spend sufficient on clerical work that your bills, letters, etc., went out promptly and neatly and thus impress your customers of your business ability and up-to-date-ness?

Did you sell too much? Who ever sold too much? Well, how about stock that is in demand and always sells, did you put a large amount of effort into sales of this class and thus deplete your staples and leave on your hands stock you wanted to get rid of? Did you produce 20 per cent increase over normal sales by increasing your advertising expense 50 per cent? Did your increase in sales increase your labor out of proportion? Did the handling of your increase in sales so flood your office that it caused you to abnormally increase your clerical force?

Now the gist of the matter is this, the expense account is severely pared and the result is production and selling is greatly impaired. Then on the other hand.—Sales are increased, desirable staples sold out and other expenses mount up out of proportion to what they would be under normal selling effort and sales. We might put it this way—spend too little and get less, get too much and spend more.—National Nurseryman.



## NEW ARMY POST.

Of tremendous significance to the Pacific Northwest, the state of Washington in particular, and Pierce County and the City of Tacoma especially, was the announcement December 4th that the United States government would establish a division army post at American Lake. All that remains to consummate the plan is Pierce County's purchase of the 70,000 acres of land needed by the government. To this end the county commissioners have called a special election to be held January 6th to vote upon the question of issuing \$2,000,000 in bonds bearing interest at 4½ per cent. This sum will be used to pay for the land, which will be condemned in court.

No announcement in years has excited as much interest or comment as that of the government's intention to make the American Lake tract a military center second to none in the United States. The proposed army post represents the first attempt in the history of the country to establish a permanent division cantonment.

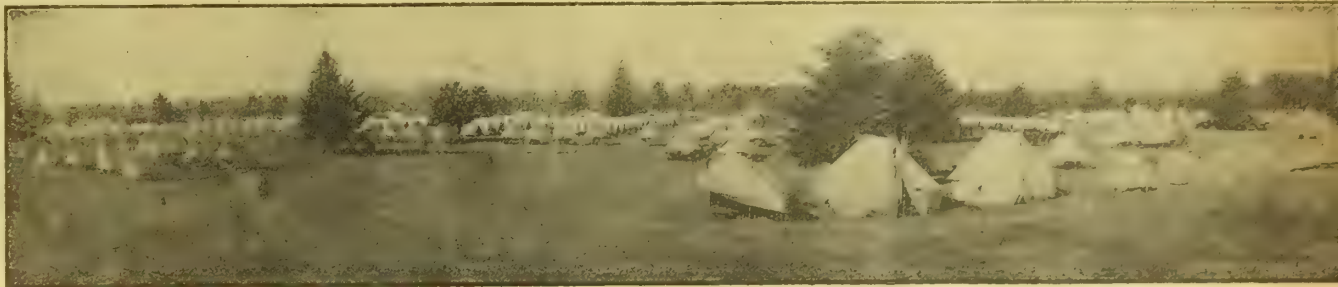
Establishment of the division post will mean that not less than 670 officers and 15,000 troops, and perhaps 25,000, will be maintained at the camp at all times. Not only will the regular soldiers be stationed there, but national guard troops will be assembled at the cantonment for training purposes as well. The 108 square mile tract will be one vast mobilization center for government troops. Approximately 100,00 troops

the National Bank of Tacoma, was chairman of the committee. Other members were Frank S. Baker, publisher of the Tacoma Tribune, Attorney J. T. S. Lyle, and Jesse O. Thomas, Jr. The plan to establish the post was made possible under the terms of an act of Congress, passed in August, 1916, which authorized the secretary of war to accept donations of land from county or state governments for military purposes.

The land in question extends from the present state military reservation at Cosgrove, American Lake,

pending in lumber alone to provide adequate living quarters for officers and men. The horses will also have to be provided for. Forage for the animals, and food and drink for the soldiers will run into the hundreds of thousands of dollars. The payroll for the division of troops will amount to \$3,500,000 annually. Army experts estimate that about \$7,400,000 will be used annually in buying supplies for the post. How great this amount will be, and how much of a stimu-

One of the reasons prompting the government's approval of the division cantonment is the fact of the large farming area contiguous to and tributary to the new post. The Puyallup and White river valleys probably will be most directly benefited. Yet other sections of the state will undoubtedly supply much of the supplies that will be used by the government. Eastern Washington and Oregon as well will be drawn upon for supplies. The shipping facilities, both water and rail



## REGULARS AND GUARDSMEN AT AMERICAN LAKE

This is a part of the ground included in the proposed purchase for the army post. The special election on the bond issue will be held January 4.

to a point near the town of Steilacoom, and south to and embracing the towns of Hillhurst, Roy, and Dupont. The Nisqually Indian reservation forms the southern boundary. The area includes 140,000 acres. The

lant it will be for the commercial interests of the Northwest may be realized when it is figured that the total annual retail trade of Tacoma, a city of more than 100,000 persons, is \$7,000,000 annually.

are unequalled. War department officials and men of the regular army, from Major General Hugh L. Scott, chief of staff, down, have united in pronouncing it the best site the government could get.



## DAIRY BARN ON THE POLSON FARM AT MONTESANO

Ensilage is used extensively. Wm. Polson, who has charge of the farm, believes that success in farming here depends on better crops from smaller acreage and in cutting out waste.

may be expected in the near future to assemble on occasions for huge maneuvers when the plans are fully developed.

The new project will probably draw troops from as far East as the Dakotas, and include soldiers now stationed at smaller posts in the Northwest. For many years army officers, without exception, have pronounced the American Lake site as the finest piece of ground in the country for military purposes. The flat, rolling prairie with small areas covered with light timber, and the lakes and creeks afford an ideal maneuver ground. The federal cantonment will not interfere with the state military encampment at American Lake, but will adjoin it.

Only the contingency that the voters authorize the bonds, the proceeds of whose sale will be used to buy the land to be given to the government can prevent the establishment of the new army post. The federal government has already signed an agreement in the matter. President Wilson approved the agreement after it had been signed by Secretary of War Newton D. Baker. Signing of the agreement came after a committee of Tacoma citizens had waited upon Mr. Baker at Washington, D. C., in advocacy of the project. Stephen Appleby, cashier of

most valuable part of this area, however, including the incorporated towns, will be excluded from that to be purchased and given to the government. The war department will select the 70,000 acres it desires to use. The government could also turn over to the war department the lands in the Nisqually Indian Reservation if desired, and provided the interior department was willing to make the necessary deed.

The Northern Pacific Railway company, whose lines go through the tract, has agreed to sell its 2,837 acres for \$8.30 per acre. All the land will be purchased through condemnation proceedings in court, however, and will not be bought in the open market. Attorney J. T. S. Lyle has been retained by the county to act as special attorney in these proceedings. All land speculating features thus will be eliminated.

Although of tremendous significance from a military point of view by affording adequate protection to Puget Sound territory with its forts and great navy yard at Bremerton, the army post project will be no less important in the commercial aspects which it presents. The county, state and whole Northwest will undoubtedly benefit. It is estimated that \$1,500,000 will be ex-

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tions for orchard soil improvement.

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## HORTICULTURE

### PLANTING TREES.

Before setting, trim any ragged wounds on the roots and shorten very long roots so they will not be cramped in planting. Tramp the soil firmly from the bottom of the hole up, in setting. When the hole is filled, spread an inch of loose soil over the tramped surface so as to prevent baking and drying out, is the recommendation of J. C. Whitten, of Missouri College, which also applies to the Northwest.

Peach trees should be pruned back most severely of any of our orchard fruits when set. All the side branches should be cut off close, thus trimming the tree to a single whip. This whip should then be shortened to about two and a half feet in height.

Cherry trees should be pruned least severely of any of our orchard fruits. If well branched, cut out the central stem of the tree so as to leave an open center. Leave three to five main outward spreading limbs well distributed around the trunk.

The reason for pruning the peach so severely is because it readily puts out strong new limbs from the main trunk. On the other hand, the reason why the branches of the sour cherry should not be shortened is because they start growth readily from the active buds near the tip of the limb but will not produce vigorous growth from the dormant buds of the main stem or base of the limbs.

The Japanese plum tree should be shaped like the peach. Other plums, apples and pears should be formed as follows: If the tree is an unbranched one-year-old, having a single whip, simply shorten the whip to 2½ or 3 feet in height. If the tree is well branched, cut out its central leader above the branching system to give an open center. Shorten back the branches which remain, one-third to one-half their former length.

### WINS JUDGING CONTEST.

Mr. Roy Larsen, a student representing the State College, won the apple judging contest at the Ninth Annual Apple Show in Spokane. The State College ranked first in the scoring, the University of Idaho second, and O. A. C. third.

### PEAR LEAF WORM.

The pear leaf worm, an insect which does considerable damage to pear orchards, especially on the Pacific Coast, is easily controlled by spraying. A contact spray is usually effective in controlling the insect in the larval stage, and should be applied when the blossoming period is about over and two-thirds of the petals have fallen. The following formula for a contact spray is given in a new professional paper of the Bureau of Entomology, U. S. Department of Agriculture: Fish-oil soap, 1 pound; water, 25 gallons; nicotine sulphate (40 per cent concentrate); 1 to 1,200 parts of the spray. When the infestation is severe and promises destruction of the foliage, a poison spray, made of 4 pounds of lead arsenate to 100 gallons of water, should be used. The best time for applying this is when the holes in the leaves are not larger than one-half inch in diameter.

### A SIGNIFICANT EXPERIMENT.

In order to test out the hardiness of Giant Marrow Cabbage, E. E. Martin, of Bangor, last year planted a row about 100 feet long thickly with the seed thereof about September 1st, 1915, the seed came up fine and grew nicely till cold weather and frosts set in. It had no especial attention, and absolutely no covering or protection for the winter, and despite the severest winter in decades—zero weather at times—many alternate freezings and thawings—our nine snows, etc., not a plant was killed thereby.

ed thereby. It came on very early, affording splendid table greens in March, and chick and cow feed to date—nearly 9 months, and some of the plants are over 6 inches in diameter of trunk, 6 feet high—one that shows signs of seeding is over 8 feet high. Several of them are 6 feet across the top—(tip to tip of largest leaves). Mr. Martin says he firmly believes that in this climate Giant Marrow Cabbage seed can be planted almost nine months out of the year, to advantage.

### WINTERING BEES.

Failure to insulate the bottom of the hive largely offsets the value of insulation around the hive in the outdoor wintering of bees, according to the annual report of the Chief of Entomology of the department of agriculture. Experiments conducted with a number of insulated hives showed that much heat was lost from the unprotected hive bottom. Insulating these bottoms was found to increase their value greatly. Manufacturers, therefore, have been advised to build insulated hives with insulated bottoms. According to the report, the choice of insulating material is of minor importance, as the materials commonly used—shavings, sawdust, leaves, and chaff—do not differ greatly in insulating value.

On the subject of insulation, the entomologist says, in part:

"Beekeepers have repeatedly claimed that excessive insulation is even more detrimental in winter than insufficient insulation, because of the failure of the colony to warm up on bright days. To test this theory, a colony was packed, in the fall of 1915, with 16 inches of sawdust on all sides, top, and bottom. Temperature records were made at frequent intervals every day throughout the winter and spring. The colony remained in excellent condition in every respect throughout the winter, being little affected by high winds, and after brood rearing began it built up with great rapidity. Then, to continue observations on the effect of insulation on the building up of the colony, the packing was allowed to remain all summer. Except for the impossibility of manipulating the colony, it remained in excellent condition. It seems clear, therefore, that beekeepers need not fear any detrimental results from abundant insulation at any season of the year."

### WINTER SCHOOL

The winter school at the Western Washington Experiment Station at Puyallup will open January 1st. An excellent opportunity is offered here for study along the lines of dairying and stock raising, horticulture and poultry. Early enrollment is urged, as the classes will be limited to 65 in livestock and dairy, 65 in horticulture and 20 in poultry.

#### Courses of Instruction. . .

Regular class work, consisting of lessons from textbooks, assigned readings in the library, and lectures, accompanied by laboratory and practice work is offered in each of the three principal lines: Fruit Growing and Gardening, Livestock and Dairy Farming, and Poultry Management.

At the completion of each course of study, a written examination covering the work of the course will be given and certificates showing the work which has been satisfactorily completed will be furnished to all who desire them.

It will be impossible for anyone to take all the work offered in the Winter School. It is hoped that many students in these short courses will attend for more than one Winter School session, taking in a second or third year the work which cannot be covered the first year.

The following brief description of the courses which are offered indicate the general nature of the work and the kind of information which may be derived from them.

#### Horticultural Subjects.

Principles of Plant Growth—Structures and functions of roots, stems,

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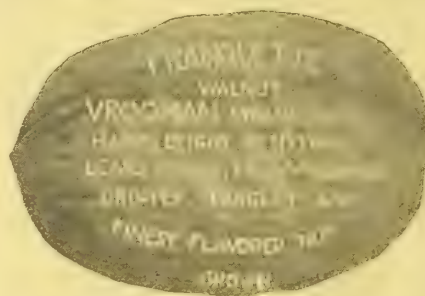
## SEEDS the kind you cant keep in the ground — they GROW.

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Sends 60 acres of this one type. The Oregon Nursery Co. early recognized the superior merits of this nut and secured an exclusive contract with Mrs. Vrooman for the scions, buds and nuts from her orchard for propagating purposes. We are therefore the introducers and propagators of the only genuine Vrooman Franquette.

Send for literature on Walnut Culture and mention this paper.

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and leaves of plants; of fruit buds, flowers, fruit and seeds; sex and fertilization of plants; influence of pollen.

**Principles of Fruit Growing**—Varieties of tree and small fruits best adapted to western Washington; propagation of these fruits by cuttage, layerage, and graftage; good methods of fruit culture for home or commercial use; rejuvenation and repair of old fruit trees.

This study includes planting, pruning, and general care of apples, pears, cherries, plums, etc., and growing of strawberries, raspberries, blackberries, currants, gooseberries, and other small fruits from the standpoint of the beginner. Actual work in fruit packing will be given. Systems and methods of marketing will be discussed.

**Principles of Vegetable Gardening**—Vegetable crops adapted to Western Washington; good methods of vegetable growing for home and commercial purposes; construction and care of hot-beds, cold frames, and seed beds, succession and companion cropping of vegetables.

This study includes such garden crops as beans, cabbage, cauliflower, celery, onions, potatoes, peas, tomatoes, asparagus, horseradish, and rhubarb.

**Plant Pests and Their Control**—Life history of the principal diseases and insects attacking fruit and vegetable crops in Western Washington and practical methods of control; the making and application of the most important sprays; the choice and operation of spraying machinery for the garden and orchard.

**Ornamentation of the Home Grounds**—The principles of ornamentation of the home grounds will be studied, including the laying out of walks and drives; the making and care of the lawn. The selection and care of our best native and cultivated ornamental plants and their arrangement on the grounds, will be given considerable time. Roses and their care will be taken up in detail.

#### Live Stock and Dairy Subjects.

**Live Stock Types**—A brief study will be made of the market types and pure breeds of horses, cattle sheep and swine adapted to Pacific Northwest conditions, giving consideration to their distinguishing characteristics in conformation and the conditions under which each can be most successfully produced.

**Principles of Feeding**—A brief study will be made of the processes of digestion, classification and composition of feeds, factors influencing their digestibility and palatability and the computing of balanced rations.

**Breeding and Management**—The principles of breeding as applied to live stock will be considered, including systems of breeding. Plans for successful live stock management under Western Washington conditions will be outlined.

**Dairy Farming**—This study will include a consideration of equipment and conditions necessary for successful dairy farming, the management of the dairy herd and the handling and disposal of the dairy products.

**Milk and Its Products**—The secretion, composition and physical properties of milk will be studied and practical sanitary methods of handling milk and cream on the farm will be outlined. Practice will be given in milk and cream testing and in the operation of the cream separators.

**Accidents and Diseases of Farm Animals**—The care of domestic animals with reference to preventing disease, the physiology of animals in its relation to the formation of energy to produce work, meat or milk; discussion of common ailments that may be given home treatment, disinfecting wounds, bandages, treating colic or bloats, casting, drenching, obstetrical operations, etc.

**Farm Management**—Selecting, planting and equipping a farm; types of farming, methods of management, labor problem, farm organization—the business side of farming.

#### General Subjects.

**Soils**—This will consist of a study

of the methods of handling different soil types to improve the physical and moisture conditions and increase fertility. There will be considered as fully as time permits soil formation and classification; soil moisture and its conservation; drainage; characteristics of soils; tillage; soil fertility in relation to the forms of plant foods, artificial fertilizers lime, barnyard manure and green manure crops.

**Farm Crops**—This will consist of a study of the principal field crops adapted to Western Washington, considering the crops adapted to different kinds of farming, different types of soil and their uses. Special emphasis will be placed on growth and propagation of plants; improvement of plants; soil preferences of crops; the grasses, clovers and mixtures; peas and vetches; miscellaneous legumes; the cereals; corn, root crops; rotation of crops; and control of weeds.

**Farm Mechanics and Machinery**—Principles of draft, use and care of farm implements, use of concrete on the farm, planning of silos, dairy barns and other farm buildings, and the operation of gasoline engines are among the more important topics that will be studied.

#### POULTRY COURSE.

The poultry course differs from the horticultural and live stock courses in the emphasis placed on the practice work. Those enrolled in the poultry course will devote the greater part of their time to actual work with the poultry, receiving in addition two classroom lessons per day. The fundamental principles relating to the establishment of a flock, reproducing, improving and increasing it and disposing of the finished product will be carefully studied. In addition the students will be able to obtain a working knowledge of the most important lines of work incident to the operation of a modern poultry plant.

**Poultry Management — General**—The thirty lessons grouped under this general heading will include (a) classification of breeds, (b) laws of breeding, (c) incubation and brooding, (d) principles of feeding, (e) management of laying, breeding and dual purpose flocks, (f) records and keeping them, (g) poultry diseases.

**Poultry Management — Special**—This series of thirty lessons will include a study of (a) poultry buildings and equipment, (b) arrangement and handling of yards and production of green food supply, (c) characteristics of breeds, including judging, (d) handling market poultry, including caponizing, (e) disposal of products, (f) combining poultry with other branches of agriculture, (g) some causes of failure in poultry management.

**Poultry Practice**—Practice work with incubators, brooders, baby chicks, laying flocks and in the construction of poultry buildings and appliances will be provided and expected of all students enrolling in the poultry course. The number of students that can be accommodated in this course is limited to twenty, but the thirty lessons in general poultry management may be taken by anyone enrolled in the Winter School.

#### Grouping Subjects.

Students enrolled in the Horticultural Course will all take the following subjects: Principles of Plant Growth, Principles of Fruit Growing, Principles of Vegetable Gardening, Plant Pests and Their Control, Ornamentation of the Home Grounds and Soils. They are advised also to take Poultry Management, General and Farm Mechanics and Machinery, and they may find it possible to take some other subjects.

Students enrolled in the Live Stock and Dairy Farming Course will take all the live stock, dairy and general subjects and are advised to take Poultry Management, General, in addition.

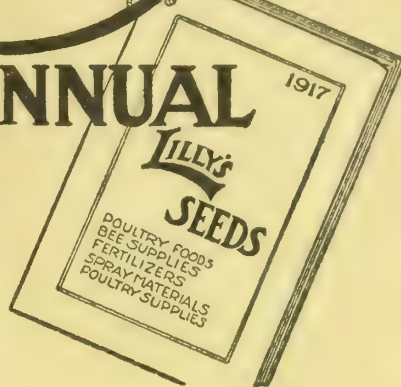
Students enrolled in the Poultry Course will devote all their time to poultry subjects and poultry practical work.

| 1917 JANUARY 1917 |    |    |    |    |    |    |
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## LILLY'S ANNUAL

Ready to mail to you the first of the year. It is a complete buyer's guide of Seeds, Poultry Supplies, Bee Supplies, Stock Foods, Spray Materials, Fertilizers, etc. Also contains very valuable information about soils and cultural directions. Send your request for copy early to

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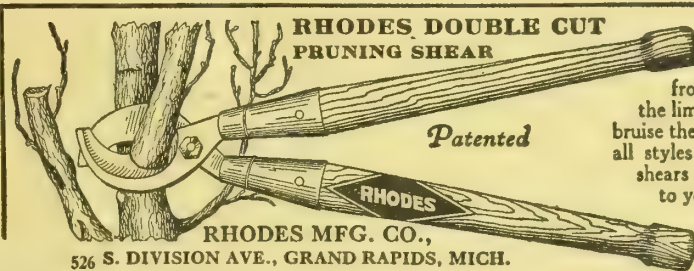
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Wholesalers of Nursery Stock and Nursery Supplies.  
A very complete line of Fruit and Ornamental Trees, Shrubs, Vines, Etc.

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Clean Coast-grown Seedlings, Oregon Champion Gooseberries and Perfection Currants.  
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THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

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Grafted Walnuts. Trees of all kinds. Buy direct—save 50 per cent. (No Agents.) Our prices sell. Write for Planter's Catalog and Price List. Twenty-six years in business.

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We have facilities to handle quickly and advantageously  
**YOUR FRUIT, POULTRY AND EGGS**  
We make prompt returns of proceeds on all consignments. We answer promptly all inquiries as to market, prices, or of any other nature. Twenty years of satisfactory service to growers our best recommendation.  
923-5 Railroad Avenue. CHAS. UHDEM. Spokane, Wash.

#### BUY TRADEMARKED GOODS

When you buy a trademarked article, you are buying an article that the manufacturer stands back of. If he did not know the quality was

right, or if he was not ready to make good any unavoidable defect, he would not put his name on it. Ask your dealer for trademarked advertised goods.



**HORTICULTURISTS MEET.**

Attendance at the Oregon State Horticultural Societies Convention at Hood River this month was not as large as might have been desired, but Secretary C. D. Minton said that the war and car shortage were to blame for this.

In an address on "What Shall We Pack in Apples," Mr. Shepard said that the cost of growing a box of apples was 30 cents, and another cost of 30 cents was required in the expenditure of packing and marketing. Unless growers can get this price for a box of a certain variety, he said it should be eliminated. He also said that unless growers could get 59 cents a box for their culled apples it would be more profitable to dispose of them to by-product plants at the rate of \$6 a ton. He suggested that apples be segregated into two grades instead of three.

Mr. Sieg in his address said that despite the stringent car shortage, 11,800 carloads of apples had already been shipped from the Northwest this season, more than were shipped during the entire marketing season of last year.

Mr. A. A. Quarnberg, Vancouver, Wash., a grower of walnuts, presented to the organization a gavel made from the oldest apple tree in the Northwest. In his speech he told the story of the tree now 90 years old, still alive and bearing apples, at Vancouver Barracks. It was planted by one of the men of Dr. John McLoughlin, governor for the Hudson Bay Company.

It was voted that the next meeting be held at Salem, Ore., next year, and the following officers were elected:

Robert Paulus, Manager Salem Fruit Union, president; Dr. C. H. Bailey, Roseburg, vice-president; C. D. Hinton, Portland, re-elected secretary. A. P. Bathem, Portland, was re-elected to the board of trustees. Other trustees are Judge Charles McNary, Salem, Ore., and Albert Brownell, Portland, Ore.

**FORAGE CROPS.**

The following facts as to the work in developing new and better varieties of forage crops carried on by the U. S. Department of Agriculture in the past year are taken from the annual report of the Chief of the Bureau of Plant Industry.

The introduction and breeding of hardy and drought-resistant strains of alfalfa is being prosecuted as vigorously as possible. An especially promising new strain has been secured from India, which seems to be well adapted for use in the Southwest. Investigations to determine the cause of "yellowing" of alfalfa and to develop a practical treatment for this trouble, which is a serious handicap to the culture of the crop in many parts of the East, indicate that the stage of maturity at which the crop is cut has much to do with the degree to which the succeeding crop is affected.

The pollination studies of red clover carried on in co-operation with the experiment stations in Iowa and Indiana show that cross-pollination is absolutely essential to the setting of the seed; that honey-bees are very important as pollinators; and that all the mechanical methods of pollination that have been suggested and tested are of no practical value. The increased plantings of sweet clover, due in a large measure to the recommendation of the bureau, are in many areas rapidly replacing red clover. Extensive sweet clover investigations have been conducted with this crop in determining the best methods of culture. Field tests with the crimson clover seed harvesting machine devised by this bureau have given exceedingly satisfactory results.

Tests of Sudan grass in co-operation with State experiment stations were continued during the past year and a large body of accurate knowledge obtained concerning the crop. Seed production north of the region where Johnson grass is abundant has been encouraged, with the result that

there is now available a good supply of pure seed which can be purchased at reasonable prices. The lower prices have greatly encouraged the growing of Sudan grass for hay.

Cactus investigations have been continued in the extensive cactus garden at Chico, Cal. Breeding work has resulted in the production of a number of new forms, some very promising as forage plants, others for fruit production.

Vetch investigations are being continued in co-operation with the Oregon Experiment Station and some of the species of vetch have been hybridized. An especially interesting hybrid is that between *vicia sativa* and *V. augustifolia* which, from the known characteristics of these two species, is likely to prove of very high importance on the south Atlantic coast.

A notable development during the past two or three years has been the interest in Natal grass in Florida. A very large acreage of this grass is now being grown for hay and in some sections is coming to be regarded as a basis for land values. Natal grass was introduced by the department some 25 years ago, and while its culture has been urged in a conservative way in various publications, it is only within the past few years that it has made the progress its high merit deserves. Natal grass promises to produce all of the hay required in Florida and will probably furnish a surplus for export from that State.

The report also mentions the progress that has been made in bringing about the commercial utilization of soy bean seed. It points out that in the cotton belt this crop promises to be an important element wherever the acreage of cotton has been reduced.

**NEW PEACH ENEMY.**

An insect destructive to the peach and kindred fruits, believed to be new in the United States, has been discovered by entomologists of the Federal Department of Agriculture in the District of Columbia and its environs. This insect, which in its adult form is a brownish moth and in its larval stage a small white and pink caterpillar, attacks both the tender shoots and fruit, causing serious losses.

Because of the habits of the worm, the usual control measures such as spraying with certain arsenates will probably not be effective. The smooth young shoots, owing to their rapid growth, are protected by the poison solution for only a very short time after the spray is applied, and hence it is almost impossible to poison them. The entomologists of the department who have been investigating the pest, will continue to study it in the hope of developing control measures.

The insect, known to science as *Laspeyresia molesta*, is believed to have been introduced from Japan. So far as the department's entomologists know, it has not been found in America other than in the District of Columbia and in the adjoining territory in Maryland and Virginia. The specialists are desirous of knowing if the insect has attacked peach, plum or cherry trees elsewhere in the United States.

The presence of the insect can best be determined in most cases by the nature of its injury to peach trees. It bores into practically every tender twig and causes new shoots to push out from lateral buds. These are attacked in turn, the abnormal stimulation of lateral growth producing a much-branched and bushy plant. A copious flow of gum from the twig-ends often follows the attacks of the caterpillars.

In attacking fruit the young caterpillars generally eat through the skin at or near the point of attachment of the fruit stem. The larva, as it grows, makes its way to the pit, where it feeds on the flesh, which soon becomes much discolored and more or less slimy. Larvae entering at the side of the fruit are more

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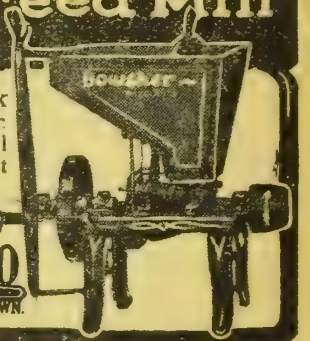
**Get a Bowsher Feed Mill on Your Farm**

Here's the feed mill that caused more talk at the Oregon State Fair in Salem this year than any machine on the grounds. The Bowsher will cut your feed bills a big 25% at the same time it improves the quality of the feed.

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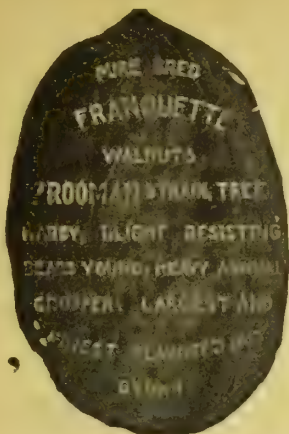
**Raise High Priced Wheat on Fertile Canadian Soil**

Canada extends to you a hearty invitation to settle on her **FREE Homestead lands of 160 acres each** or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil — land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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Canadian Government Agent.





### THE VROOMAN FRANQUETTE

This is a distinct type of nut produced in the celebrated Vrooman orchard at Santa Rosa, Calif. It is large, oval, thin shelled, full meated and perfectly sealed, retaining its rich flavor indefinitely, commanding a higher price than any other nut. The trees, young and old, withstand temperatures of 20° below zero. They bloom late, thus escaping late frosts which frequently kill the crops on most other varieties. They are self-pollinating, which means that an isolated tree will produce nuts while many other varieties must be cross-fertilized. The above three prime requisites are combined in no other variety.

The walnut industry is assuming larger proportions every year. Our profitable nut sections are limited and over-production is out of the question. In the rich mild irrigated sections of the Northwest the walnut bears as early and as profitably as the most favored fruit, besides which there is practically no expense for upkeep and but little harvesting expense and no waste, as it is not a perishable product and can be gathered, held and marketed at the convenience of the grower.

We are propagating and selling the Vrooman Franquette under license from the Oregon Nursery Co., of Orenco, Ore., which holds an exclusive contract from the Vreemon orchard people at Santa Rosa, California.

Write us for special walnut information, giving us particulars as to the elevation, soil and climatic conditions in your locality.

Pears, Prunes, Plums, Cherries, Apples, Apricots and all other staple fruits, large and small, besides Ornamental trees, Shrubbery, Vines, Roses, etc. Leave your name and address, and tell us your probable needs.

### Washington Nursery Co.

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Nursery on the clean, new soil of the Yakima Reservation. No bugs or tree diseases.

likely to eat out pockets or cavities in the flesh.

The full-grown caterpillar spins a whitish silk cocoon in which to pupate. Moths emerge in the spring for egg-laying by the time the shoots are well out.

The Bureau of Entomology, U. S. Department of Agriculture, especially requests owners of peach or other fruit trees to report the presence of this new pest in their orchards. Specimens of twigs may be mailed wrapped in paper or, preferably, in a suitable box.

### CONVENTIONS AT CORVALLIS

Oregon prune growers and growers of walnuts and filberts, as well as producers for market of fruits and vegetables of any kind, have an opportunity to meet the leading men of the state in these lines, along with specialists of the Agricultural College and outside states, at the Prune Growers', Nut Growers' and Marketing conventions to be held at the College the first week in January.

Everybody knows about the Oregon prune and its important place as a money-maker in the fruit business, but the rapidly growing importance of the English walnut and the filbert may not be so generally known. Time was when all nuts of these kinds were imported from some other country. Then came the wish on the part of some fruit man to grow the nuts in Oregon. Then experiments, more or less successful, for two score years or more. Now must have taken a place in the horticultural industry of the state and supply a large part of the heavy yearly sales. These nuts are often of good size and quality, and command top prices in the market. But the search for varieties better adapted to Oregon conditions and for more effective methods of producing and marketing the nut products, is still under way, and the men who know most about these things will be at the conventions to compare notes and give others the benefit of their experiences.

Recent progress in growing and handling the prune will be related by the men of Oregon and elsewhere best qualified to speak. A great deal of the advance work has been done by the college specialists, who will give farmers the benefit of their findings.

The rise and work of the Fruit Growers' Agency, Inc., will be considered by the president, Capt. Paul Weyrauch, the functions of local organizations by Dr. Hector Macpherson of the college, and the physical handling of fruit by Professor C. I. Lewis, of the college horticultural division.

### LOGGED OFF LAND BILLS.

The State Legislature at its next session will be asked to consider and sanction three measures designed to help solve the problem of putting into use the stump lands of Washington. The measures were formulated by the third logged-off land conference held recently on the university campus.

The improvement district plan proposes that districts be organized within counties for purposes of buying land clearing equipment and blasting powder to be sold to the farmers at cost. The districts are empowered to buy stump land from the farmers at a low valuation and after the land has been cleared sell it back at small annual payments.

Logged-off land under process of clearing would be exempt from taxation under a proposed constitutional amendment which plans for the classification of property for taxation.

Under another measure the state's credit would be pledged by the state land board to the extent of its last assessed valuation for the sale of bonds. Funds thus arising would be loaned to farmers for terms of ten to thirty-six and one-half years. The rate of interest would be 5 per cent. The interest on the state's bonds would be 4 per cent. The amount of the loans would not be allowed to exceed 50 per cent. of the value of the land and could not be for less

than \$200 or more than \$5,000. The purposes for which this loan could be spent are specified.

The Legislature will be further asked to establish a department of agriculture, which would handle all powers and functions pertaining to agriculture.

A provision designed to break up large tracts of privately owned land authorizes the state to acquire by condemnation, under the right of eminent domain, lands in suitable tracts which it may sell to actual settlers.

### CHEAP STOCK EXPENSIVE.

The unprecedented demand for pure-bred live stock will sooner or later result in the marketing of many animals eligible to registry, which are inferior as individuals and which may prove poor breeders. S. T. Simpson, of the Missouri College of Agriculture, reminds buyers that the present high values afford all the better reason for investing in only good breeding animals even though they appear high in price. In this way only can the present high standard be maintained and the scrub pure-bred finally eliminated.

The use of the registered scrub can but discourage the cause of pure-bred sires and better live stock. The breeder who markets such individuals will ultimately suffer the criticism of those who know good live stock, and finally be discriminated against in buying and selling. The purchaser of the scrub pure-bred can breed nothing but inferior individuals so long as he persists in buying the pedigree with no regard for individual merit.

The pure-bred sire is the best means of live stock improvement. Whether good or bad he is half the herd and something more. For this reason the selection of the sire demands equally as much attention as the entire group of females, and it is far more important to have a good sire, both in individuality and breeding, than to have one or two good females. If sacrifices must be made, let them occur in the selection of the females. Better still, let every one be a good one, both in breeding and individual excellence.

### NORTH YAKIMA EXTENSION SCHOOL.

The strongest corps of speakers ever assembled in Extension work in the Northwest will have charge of the Extension School for Farmers in North Yakima, December 18-23. A week full of profit and value to everyone attending is certain.

Among the new offerings this year will be lectures by Prof. Asher Hobson, State College of Washington, on marketing farm produce by parcels post and express and the new National Farm Loan act; and Prof. M. K. Snyder, Sanitary Engineer at the State College, who will present lectures on water supply for the country home and sewage disposal for the country home.

Other speakers will include Prof. W. S. Thornber, Director of Extension, who will handle orchard problems and community building; Prof. Jas. N. Price, Dairy and Live Stock Expert, on dairy herd improvement and management, swine breeding and feeding; Prof. Leonard Hegnauer, Soils and Crop Specialist, will emphasize good seed, soil fertility, corn and potato growing, etc. Miss Mary E. Sutherland, Extension Specialist in Home Economics, will devote her entire time to the women of the community, presenting topics dealing with cooking, sewing, millinery, care of children and home activities of all kinds.

Aside from the big school meetings will be held each evening in two or three communities out of North Yakima at which the above speakers will be utilized.

Advertisements in the Northwest Horticulturist and Dairyman are reliable. No medical or questionable advertisements are accepted. Mention this paper when you write to advertisers.

**SPRAY**

The simplest spray pump made. No suction. No packing to wear out. A pressure of 115 lbs. can be reached. Use in bucket, keg or barrel.

**Will Spray any Liquid**  
Any disinfecting fluid, whitewash, water color paint or crude oil can be used. No sediment can get in. Mixture can not settle—the pump keeps it agitated. Nothing to break or wear out. Weight 13 lbs. Write today for full description. Dealers wanted where not represented.

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### Small Fruit Plants at Wholesale Prices

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| Blackberries | Dewberries |
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Write for Price List.

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### GIANT MARCOW CABBAGE

In official yield test, Western Washington Experiment Station grew 14 edible tons per acre more than 1000-headed Kale. (See Bulletin No. 95.) Hardier. No waste; stem (trunk) RICHEST PORTION. Ideal chix, table. ALL stock "Greens." My farm backs up every grain of limited seed supply. Self handled from planting to mailing. DON'T RISK ANY UNGUARANTEED SEED. Packets for 10 square rods, 25c; 5 such \$1.00. Not for sale in bulk. Photos, directions, efficient "Maggot-fly" remedies, leaf section, for postage.

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### TRUE to NAME

### Free from Pests

That's what you want when you plant fruit trees. That's what you get when you order the

### O. & F. Unxld Brand

Get our prices before planting this fall.

Largest stock in the Northwest.

All grown on virgin soil.

Everything in fruit trees and a full line of

Flowering Shrubs  
Roses, Shade and  
Ornamental Trees

### Ornamental and Fruit Nursery Co.

Box 217 K Wapato, Wash.

Catalog will be mailed free upon request.

### FRUIT TREES-ORNAMENTALS

And everything in the nursery line. All stock of No. 1 quality, free from disease and grown right. The stock that grows and gives results. Established at present location over 25 years. Catalog on request.

**CHRISTOPHER NURSERIES**  
Christopher, King County, Wash.



## THE DAIRY

### DAIRYMEN TO FIX PRICES.

The dairymen of Skagit County have taken steps toward fixing prices on their milk, the outline of their plans being given in the following agreement which was adopted at a recent meeting in Burlington:

"Knowing that unusual business conditions have made condensed milk a valuable product above normal, and that the producer of milk can secure a fair share of the advanced profits and that the producers can secure their fair share of the addition only by associating themselves together in a voluntary association, without profit as such, for the purpose of marketing the product as an association and receiving a fair and profitable price for the milk, I, the undersigned, a dairyman of Skagit County, Washington, owner of cows, do hereby give and grant the exclusive sale of all my milk to and under the authority of a price committee, to be appointed by the directors of the Skagit County Dairymen's Association subject to the following:

"(1) The business shall be carried on in full compliance of all law, State and Federal, and I hereby authorize the committee to change, when required, this agreement as to all conditions, requirements and provisions in carrying out the spirit hereof so that the same shall comply with law and protect my rights, and to that end and for that purpose I will execute any new or amendatory agreement as may be required by the same committee or the council hereof.

"(2) All milk, except as hereinafter provided, shall be offered by said committee at \$2.50 per hundred pounds, on the usual terms, for the months of January, February and March, 1917; thereafter the committee shall arrange prices quarterly, or at such other dates as shall best subserve the interests of the subscribers and shall fully advise all subscribers.

"(3) This agreement shall not take effect until owners of 6500 cows in Skagit County shall sign a similar agreement.

"(4) The said committee shall have full power to carry on the business, subject, however, at all times to recall and direction by a majority of the subscribers.

"(5) The said committee shall have the exclusive control and disposition of the milk I may produce, and shall as a matter of courtesy give the preference to existing customers; provided I may use all the milk needed for my own requirements.

"(6) If the said committee cannot obtain a reasonable and satisfactory price from said customers, so as in their judgment to insure us a profitable business, then they may arrange for and establish or cause to be established factories or condenseries; and said committee shall have the power to enter into such contracts with new firms, established or to be established as they shall deem wise and fair to the majority concerned.

"(7) In the event that I shall fail or neglect to abide by and observe the requirements and obligations of this agreement and the requirements of said committee I agree as liquidated damages for such non-fulfillment, that there shall be recovered from me a sum of ten dollars per cow for all cows being milked by me at the time the breach occurs.

"(8) When the producing district west of the Cascade Mountains in this State shall be organized on lines similar to Skagit County, then I hereby authorize our committee to merge our interests with the larger organizations upon such terms and arrangements as shall be fair and reasonable and for the benefit of all dairymen in the larger districts.

"(9) This agreement shall continue in force for a period of three years from January 1st, 1917 unless sooner terminated by a majority vote of all signers.

"(10) The said committee shall and may make all just and reasonable rules and regulations as shall be found and deemed reasonable, advisable and necessary in the premises."

### PACKING SILAGE.

In an experiment at the Missouri Experiment Station the corn as it left the silage cutter was just loosely thrown into one silo and in another it was packed. In the first silo a good deal molded, though in the bottom the silage was normal. The packed silage had only a little rotten on top and practically no mold developed. The unpacked silage developed a much higher temperature. The development of mold was accompanied by an increase in temperature.

### STOMATITIS IN NEBRASKA.

Careful and systematic observation of the Nebraska cattle found recently in the Kansas City stockyards suffering with sore mouths has failed to reveal certain typical symptoms of foot-and-mouth disease, according to the Bureau of Animal Industry, U. S. Department of Agriculture. The specialists therefore are of the opinion that the disease is not foot-and-mouth disease, but vesicular stomatitis, a mouth ailment which ordinarily affects horses and sometimes affects cattle. The most striking symptom of this disease is the occurrence of blisters and sores on the tongue and other portions of the mouth.

This disease, while undoubtedly contagious, is not of great economic importance, as animals ordinarily recover from it in 8 to 10 days. Vesicular stomatitis is known in Europe and South Africa and has been found occasionally in the United States. The present outbreak, however, is the most extensive yet noted in this country. The specialists of the department, therefore, are advising live stock officials in whose territory the disease is found to impose local quarantine to prevent its spread. They advise all owners and handlers of horses and cattle, particularly liverymen, managers of stockyards, and breeders, to separate sick from well animals, to clean up and disinfect their premises, and to wash out the mouths of sick animals with a weak solution of permanganate of potash or picric acid.

### RURAL CREDITS ASSOCIATION.

The first Rural Credit Farmers' association to be formed in Grays Harbor county was organized at the Summit Hall at Summit Wednesday evening. C. F. Munroe, county agriculturist, was present and had charge of the meeting. A petition was drawn up applying to the federal farm loan commission for letters of incorporation. The following officers were chosen to hold offices until the association is fully organized: Henry Tornquist, chairman, and J. K. Mohnen, secretary. About 15 farmers were present.

### HOLSTEINS FOR HAWAII.

A notable sale of Washington dairy cattle has just been made to Robert Hind, a plantation owner of the Hawaiian Islands, who has just purchased twenty head of Holsteins from the Carnation herd near Seattle.

There were two registered bulls in the list. One is a son of Johanna McKinley Segis, and of Nioma Pietertje, Third. Hardly any comment is necessary on Johanna McKinley Segis, who is well known to black and white breeders as the world's greatest forty-pound bull. A son of Johanna De Kol Van Beers. Nioma Pietertje Third is a wonderful producer, having a record of 29.20 pounds and a 5.04 butter fat test. Her sire is a direct descendant of some of the foundation animals of the breed. He is from a daughter of Milla, Pietertje Netherland, who was the greatest bull of his day, and from whom have descended many of the highest world's record cows.

The second young bull was sired by King Segis 10th, a very good son of the great King Segis and Johanna Vernon De Kol.

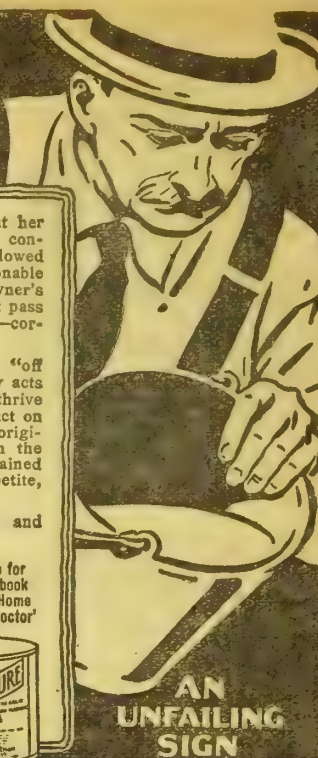
## "Short Measure-eh?"

A cow can not tell you when she is sick, but her milk yield is a very accurate indication of her condition. The fact is, thousands of cows are allowed to remain unprofitable or below their reasonable standard of productiveness through their owner's failure to act on the hint of the milk pail. Don't pass it off by simply calling her a "backward cow"—correct the trouble and reap the extra profit.

Kow-Kure is a medicine for cows that are "off color." It is in no sense a food, but it promptly acts on the digestive organs and enables the cow to thrive on her natural food. Its great curative powers act on the genital organs where many cow ailments originate. The success of Kow-Kure is positive in the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Lost Appetite, Bunches and other common ills.

You can buy Kow-Kure from feed dealers and druggists, in 50c. and \$1.00 packages.

**DAIRY ASSOCIATION CO.**  
Lyndonville, Vt.



Write for free book "The Home Cow Doctor"

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**AN UNFAILING SIGN**

Pacific Coast Distributors of Kow-Kure and Bag Balm:  
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Because it's a refined gasoline—not a mixture.

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**\$24** Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

30 Days' Free Trial! Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

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2187 Marshall Blvd. CHICAGO





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OTTAWA LATEST DESIGN

Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Full 1/2 to 1 1/2 horse-power more than rated. 3 Months Trial. Easy Terms. Sizes 1 1/2 to 22 H.P. Easy to start. No Cranking. No batteries. 10 Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it.

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Complete lines for needs of farmers. High quality, prompt service, right price.

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with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W10.

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Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable.

Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

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HAND POWER

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# Trademarked Merchandise Is Satisfactory Merchandise

When you buy a trademarked article you are buying an article that the manufacturer stands back of. If he did not know the quality was right, or if he was not ready to make good any unavoidable defect, he would not put his name on it. Ask your dealer for trademarked advertised goods.

This shipment to Hawaii also includes 18 excellent heifers, all of them tracing their pedigree to such great sires as King Segis, Pontiac Korndyke Hengerveld De Kol, Colantha Johanna Lad and others. Mr. Hind has made a good start toward the establishment of a great dairy herd in the islands, and the stock which he has taken from this state will undoubtedly give a good account of themselves.

## NEW COUNTY AGRICULTURIST.

The appointment of Chas. A. Cole as county agriculturist for Pierce County, with headquarters at Tacoma, has just been verified by the States Relations Service, Washington, State Leader of County Agriculturists, State College of Washington.

Mr. Cole has recently been associated with the Lewiston Land & Water Co. in the capacity of field horticulturist, where he had 2000 acres of farm land and 5000 acres of apple orchard under his care. Previous to that time he was for several years connected with the Oregon Agricultural College. Mr. Cole has taken hold of the reins in Pierce County and is already busy with the work of his county.

## HOGS AS BY-PRODUCTS.

One of the interesting talks at the farm schools of Western Washington was by Prof. Price on "Hogs as a By-Product of a Western Washington Farm." Prof. Price says that under Western Washington conditions where little surplus grain is raised hogs should be handled as a by-product of the farm rather than the main line of business. That is, it will be found profitable to keep enough hogs to make use of the surplus skim-milk and potatoes, to clean up the grain fields and use any other material that might otherwise go to waste. It is not profitable to go into hogs on a large scale and be forced to buy a large amount of grain unless very careful management is followed.

It is usually most profitable to allow the hogs to harvest their own feed so far as possible. They will harvest and make economical use of such crops as small grain, barley and peas, barley and oats and all the root crops. When the hogs are on pasture or a field of roots they should receive a supplementary feed of grain, giving them sufficient to keep them in good flesh and gaining rapidly.

## NEW TESTING ASSOCIATIONS.

Cow testing associations have been organized under the direction of C. C. Farr, County Agriculturist of Snohomish County at Stanwood and Arlington, to begin operations December 1st. Mr. Will H. Henry, Ellensburg, a State College graduate, has been appointed tester in charge of the Stanwood Association and Bryan Jordan, of Waikiki Farms, Spokane, will go to the Arlington Association.

## MAKING THE ENGINE PAY.

The gas engine has long ceased to be a novelty on the farm. It will be found with the plow and the harrow. Its work has been clearly defined and, yet, for hours on many days it stands idle. The progressive farmer knows that every minute a piece of apparatus is not working is money wasted, and he, accordingly, looks around for something which the gas engine can do when not needed for any specific farm duty. The farm lighting plant offers the ideal solution. When the engine has done its routine duty, it can be moved and belted to the generator of the lighting plant and started running. With the gasoline and oil reservoirs of the engine filled, the farmer may leave the system and return to the field. The lighting plant will take care of itself. The ordinary plant takes about six hours to charge; then the batteries will supply light and power under average consumption for several days.

Assuming now, that the country gentleman is convinced that electricity on his farm would be a very

acceptable feature and that he has an engine which now stands idle and which could be very easily used to operate a farm lighting plant; assuming all this, the country gentleman has several questions to ask:

**First:** Is the system safe; is there any danger of fire or shocks? All small lighting plants operate at approximately 30 volts, which is about one-quarter of the average city voltage and at which there is absolutely no danger of shock. The electric lamp consists of a wire filament enclosed in a glass bulb. There is no flame, therefore, no danger of fire. The electric lamp is the safest source of artificial light.

The next question is: Can I install and operate these plants? The large electric companies that are making a specialty of these plants pack them ready to be set up. All the farmer has to do is to remove the plant from its housing, put the batteries on a shelf and make a few simple connections clearly detailed in a comprehensive set of instructions that accompanies the apparatus. There is no electrical knowledge required to set up or operate the plant. If the farmer can run a gasoline engine, he can run the lighting system. The wiring of the house and barns is a simple operation.

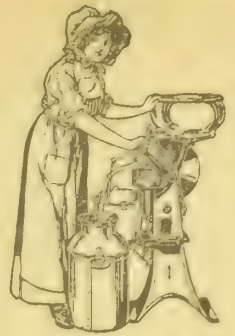
The next question is: How much does it cost to install and operate one of these systems? To answer this requires a detailed explanation. In determining the approximate cost of a farm lighting system, it is necessary, first, to decide on the number of lights on the farm. Assuming that there are eight rooms in the farm house, it will have about sixteen lamps; the creamery will have about four lights; there will be ten lamps needed for the two barns and two in the cow shed, making a total of thirty-two lamps. In average use, there will be current consumption amounting to about thirty-six lamp hours a day, which the battery must supply. A plant which is rated as being capable to supply twenty-two lamps for five hours, or one hundred and ten lamp hours on one charge of the battery, will be of sufficient size to light the above average farm, charging being necessary about twice a week. A plant of this size would cost in the neighborhood of \$300. If the farmer has no engine, a two-horse power engine, which this plant will need, will cost in the neighborhood of \$150. Material needed for wiring, together with fixtures, will cost approximately \$75, making a total installation cost of \$375 without engine and \$525 with engine. Figuring gasoline at 12c a gallon, the cost to operate the system would be 5c a day. This is a very conservative figure in that the average farm would not consume as much light as above estimated, and there are engines on the market which have far less fuel consumption than the one in this instance.

With these questions answered, the average farmer can decide for himself whether or not he is in a position to consider the installation of a farm lighting plant. It has been found from experience that those who have invested in an electric plant as described above have proven that an individual plant on one's own farm is entirely economical, efficient and reliable. The comforts, convenience and safety derived from a plant of this character will more than compensate for the expense, and it is certain that no farmer will ever regret the installation of an electric farm lighting system as no farmer ever has.

## ASSIST COUNTY AGENT.

An organization known as the Snohomish County Agricultural Council, composed of representatives from the farmers organizations in the county, was formed Saturday, December 2nd, for the purpose of assisting County Agent C. C. Farr in carrying out projects which he has under way.

A. G. Ziebell, of Kellogg Marsh Grange, was elected president, Wm. J. Fortson, of Home Acres Grange, was elected vice-president; R. D. De



# GET YOUR DE LAVAL NOW

If you are selling cream or making butter, and have no separator, or are using an inferior or half worn-out machine, you are wasting cream every day you delay the purchase of a De Laval.

You can't afford to wait until next spring. It means too much loss. Let the De Laval start saving cream for you right now, and it will soon pay for itself.

See the nearest De Laval agent right away and let him show you what the De Laval will do for you. If you do not know the De Laval agent, write direct for any desired information.

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LARGEST DAIRY SUPPLY  
HOUSE. ON THE PACIFIC  
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We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog. **SAN FRANCISCO SEATTLE**  
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### SPECIAL MIXTURES

for Dry Lands, Wet Lands, Pasture and Hay Crops, Cover Crops for Orchards.

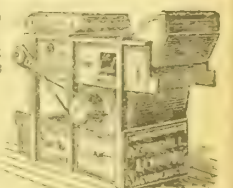
### NEW CROP—HIGH TEST

Samples and Prices on Request. Ask for Catalog No. 50.

**FARMOGERM** insures a stand—increases yield—builds up the soil.

## The Clipper

The only mill that cleans and grades all GRAINS, GRASSES, and VEGETABLE SEEDS. Its superior feature is the VERTICAL BLAST. Special Catalogue of HAND and POWER Mills on Request.



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Seed Co.  
Portland,  
Oregon



# WANTED

Second hand Sharples Cream Separators in fair condition. Address Buyer, care Horticulturist & Dairyman, Tacoma, Wash.



selle, of the Snohomish Fruit Growers, was elected secretary-treasurer.

Committees on the most important projects were appointed as follows: "Lime and Fertilizers," "Potato Standardization," "Farmers Exchange Bureau," "Pests and Contagious Diseases," "County Exhibit for the State Fair," "Dairy Productions."

Resolution bearing on the maximum loads for hard surfaced roads, state tubercular inspection work with proper appropriations and representation at the logged off land conferences were passed.

It was the opinion of the council that the president should call meetings at least each quarter.

### BUTTERMAKERS' MEETING.

Continued from page 249

conditions that may surround you. If you are in a locality where you can get milk enough in a small territory, then it may be profitable. In my locality I could get plenty of milk by hauling it, but I find that the cost of hauling is so great that I cannot pay a price high enough to buy the milk. I have given up the cheese business for a time as I cannot get milk enough to justify me in keeping a good cheesemaker, and unless one can keep a first class man he had better stay away from the cheese. I started with cheese about a year ago, largely because I thought that with my understanding of the business I could make a profitable side line of it, by not having to keep a regular cheese man, using a man from the creamery work while the cheese season lasted, and then when it closed using the man at other work. I sent a young man to the Pullman school for the short term course, whom I had had with me in creamery work for several years. I got some fairly good cheese, but it was not uniform, and while I understood the cheese business I found that I could not give it the attention that I should have done to make the kind of a cheese that one ought to make. In the making of cheese, I find that on account of the high price of milk, one must make all the cheese possible out of the milk, and I find that one must know what times of the year he can make the big yields and when he must make a hard, firm cheese. There being no standard of moisture in cheese, most factories are loading their cheese with all the moisture that the market will stand, and let us hope that a standard will be established for moisture in cheese so that a better grade of cheese will be made in Washington.

"The making of brick cheese might be a profitable business for a creamery if one can get a good market for it and make the proper kind of cream brick. The yield is much larger and the price of brick cheese is usually higher than the cheddar cheese. I have had some experience in this cheese, but have not made any great success of it as yet, but hope to get it down some time.

"The making of ice cream in a creamery is one of the side lines and in some cases it is very profitable. If one has a locality where they can sell enough of it, it is all right, but if he only sells to a small trade it is more of a nuisance than a profit. The ice cream business is only in its infancy in Washington, largely due to the fact that it has not been properly developed.

"Usually in furnishing ice cream to the trade, we must furnish it all winter if we expect to hold his trade, and where we have only a small trade, it is a source of so much loss in the winter that it does not pay to make it at all. I have been making ice cream for the last eleven years, nine years of which I have been making it in a creamery. Part of the time I have made it profitable and part of the time I have not. It is almost impossible to make ice cream in a creamery without having an ice plant and that means a considerable investment and necessitates so much help that the winter business is a loss and one must have quite a business to make it up in winter."

Prof. A. B. Nystrom, of Pullman,

spoke on "Defects in Butter," and was followed by M. Iverson, of Tonasket, with a talk on "Pasteurization." "Marketing Problems" were discussed by W. E. Turner, of Seattle.

A. D. Fish, assistant dairy inspector, gave some valuable suggestions in his talk on "Practical Methods of Improving Cream Supply."

With nineteen entries in the scoring contest, Geo. Van Kleffen, of the Washington Harbor Creamery, at Port Williams, won first with a score of 96.5. The prize was a gold watch.

For the three-year period the contest was won by I. Bendikson, of North Yakima, with a total of 842.85 points to his credit. The prize awarded him was the DeLaval cup. Geo. Van Kleffen came in for second place with a score of 842.7, and won another watch. A. Jensen, of the Laurel Co-operative Creamery at Bellingham, was in third place with a score of 834.55, and won a \$15 cash prize.

The following officers were elected: President, H. Menzel, of the Coast Ice and Cold Storage Co., Everett.

First Vice President, N. P. Sorenson, of Sorenson's Creamery, Bellingham.

Second Vice President, H. J. Kreitrahm, of the Tenino Creamery Co., Tenino.

Third Vice President, S. S. Morse, of the Montesano Creamery Co., Montesano.

Secretary-Treasurer, A. D. Fish, Assistant Dairy Inspector.

### MONTESANO RECORDS.

Continued from page 248

of grain was over 25 per cent of cost of entire ration: Returns for \$1.00 expended for feed, \$1.94; feed cost per cwt. milk, 92c; feed cost per lb. butterfat, 20.3c.

Average of 11 herds where cost of grain was under 25 per cent of cost of entire ration: Returns for \$1.00 expended for feed, \$1.73; feed cost per cwt. milk, \$1.05; feed cost per lb. butterfat, 24.8c.—C. F. MONROE, County Agricultural Agent.

### SNOHOMISH RECORDS.

The report of C. H. Bergstrom, tester for the Snohomish Valley Cow Testing Association, shows three 50-pound cows for the seventh month's work. Their records follow:

Patsey, Grade Jersey, 5 years old, owned by D. F. Sexton, 815 lbs. milk; 6.85 test; 55.82 lbs. butterfat.

Betsey, Grade Holstein, 3 years old, owned by F. L. Krassin, 1314 lbs. milk; 3.95 test; 51.89 lbs. butterfat.

Cascade Clara, Holstein, 3 years old, owned by Shadinger Bros., 1476 lbs. milk; 3.4 test; 50.18 lbs. butterfat.

Average value of product, \$23.56; average cost of feed, \$8.43; average profit above cost of feed, \$14.79; average feed cost per 100 lbs. milk, \$0.67.

Shadinger Bros. have two cows producing 40 lbs. butterfat and over; Dennis Metz, one; J. Abacherli, two; Glenwood Farm, one; George Stocker, one; F. G. Bowen, one; Kooistra & Dykstra, one; E. A. Holcomb, one, making a total of ten for the association. The averages for these ten are as follows:

Milk, 1152 lbs.; test, 3.81; butterfat, 43.95 lbs.; value of product, \$22.30; average feed cost, \$10.19; average profit above feed cost, \$12.11; average feed cost per 100 lbs. milk, \$0.89.

Records of ten cows producing between 30 and 40 lbs. butterfat were taken from same herds as nearly as possible and the averages are here given. The lactation period of this group will average about same as above:

Average milk, 834 lbs.; test, 4.1; butterfat, 54.77 lbs.; average value of product, \$16.82; average feed cost, \$7.48; average profit above feed cost, \$9.46; average feed cost per 100 lbs. milk, \$0.90.

Comparison of these averages will show that the 40-lb. cow costs less than the 30-lb. cow, while the 50-lb. animal is still less expensive a producer. The conclusion, therefore, that the highest producer is the cheapest producer is well taken.

## Puget Sound Herd Holsteins

Production as well as individuality

Home of the world's record milk cow

The first 17 head to finish their yearly records, which include six 2-year-olds, three 3-year-olds and eight cows, average for the lot 20,223 lbs. milk and 828 lbs. butter. Five of the lot average 1020 lbs. butter and 25,340 lbs. milk for a year. The dams of our three herd bulls average 26,247 lbs. milk and 1020 lbs. butter a year.

Stock for sale. Young bulls whose dams and sire's dams have large yearly records.

WM. BISHOP,

Chimacum, Washington

## King Newman Sadie Vale

Recently purchased to head this herd is a young bull of great promise. His dam is Margie Newman 2d, 149647, with a seven-day butter record of 31.13 lbs. The records of his dam, grand-dams and sires grand-dam average 32.92 lbs. of butter for seven days, and 130.62 lbs. for 30 days. His dam's dam held world's milk record for one, seven and thirty days, and is now surpassed by only one cow for the three periods.

Ononis Cornucopia Johanna Newman will head the herd until the younger bull is ready for service.

### SKYKOMISH VALLEY STOCK FARM

HERMAN STEFFEN, Prop.

Monroe, Wash.

## Pure Bred Holstein Cattle

Our herd bull is Sir Korndyke Ormsby Piebe, whose grandsire Sir Pietertje Ormsby Mercedes is the sire of the world's record milk and butter cow, Queen Piebe Mercedes, which gave 30,145.4 lbs. milk and 1403.8 lbs. butter in one year.

The cows and bulls sold from our herd during the past years are all making splendid records. Those who wish youngsters of high productive quality and carefully raised stock will find satisfaction here.

A few bull calves 5 months old and older, out of these heavy producers for sale. Write at once for prices.

### WILLIAM TODD & SONS

NORTH YAKIMA, WASH.

## Registered Holstein Cows and Bulls

We offer some choice young registered cows, now in full milk flow, and others coming fresh, also some young bulls whose records back on both sides class them with leading producers and fit to head registered or high grade herds. Their actual value are far more than selling price. Health guaranteed. Write for full particulars.

A. E. SMITH CO., Sumas, Wash.

(or White Building Seattle)

## HOLSTEIN SIRES FOR SALE

Young bulls, out of Johanna Sr Frayne (31 lbs.) Dam (22 lb. Jr. 4 yr.) out of Paul Mutual Dekol. Also a few cows, heavy milkers

JOHN CARLSON,

MANETTE, WASH.

## AYRSHIRES

Premier breeder and exhibitor, Panama-Pacific Exposition. This herd holds six world's records for production. We offer you stock which will make you a profit where others fail.

For particulars write

J. W. CLISE, Redmond, Wash.

## Cold Storage for Butter and Eggs

Now is the season to store butter and eggs. Lowest rates, best service.

### PACIFIC COLD STORAGE CO.

N. P. Wharf, Tacoma, Wash.

## CREAM AND EGGS

Have you ever shipped to us? If not, give us a trial, for it will pay you. For further information write.

TURNER & PEASE CO.,  
Seattle, Wash.

Please Mention Horticulturist & Dairyman





LUTSCKE VALE CORNUCOPIA

One of the world's record cows who is helping to keep Washington to the front as a dairy state. Owned by Wm. Bishop, Chimacum, Wash.

### DAIRYMEN WILL MEET.

The Washington State Dairymen's association will meet at Auburn on Thursday and Friday, December 28 and 29. A good program has been arranged and a number of questions of great importance will be discussed. The program follows:

#### Thursday.

Morning Session—Address of Welcome, Dr. Lacey, Mayor of Auburn. Response, C. W. Orton, Sumner, Washington.

President's Annual Address, Fred Hess, Orillia, Washington. Appointment of Committees by President.

Afternoon Session—Organization and Cooperation, W. H. Paulhamus, Sumner, Wash. Discussion.

Balancing Rations for Dairy Cows. Prof. A. B. Nystrom, State College of Washington, Pullman. Discussion. Harmony in Our Ranks, Wm. T. McDonald, Victoria, B. C. Discussion. Evening Session—Committee Meetings, and other business.

#### Friday.

Morning Session—The Relationship between the State Department of Agriculture and the Dairy Farmer,

Dr. H. T. Graves, Olympia. Discussion. What May be Done to Increase the Consumption of Dairy Products, H. F. Turner, Seattle. Discussion.

#### Stock Judging Contest

Afternoon Session—Business Meeting—Report of various Committees, Report of Secretary, Election of Officers.

The passing of B. S. Fryar, of Sumner, Wash., removes one of the well known figures in the dairy business of the Northwest. Mr. Fryar distributed from his farm at Sumner a large number of dairy cattle among the farmers of this territory.

Quantity of feed ranks next to the kind of feed in dairy rations. Economical feeding demands that cows be fed as individuals, and not as a herd. Too frequently each cow in a herd is fed the same amount of grain, regardless of how much milk she is producing. By this practice some cows will be underfed, while others will be overfed.

### HIGH MARK FOR HOLSTEINS

Continued from first page)

October 19, 1915; S. J. Klein, Silverton; \$230.

Highland Meta Hengerveld, calved September 9, 1916; C. S. Mead, Jr.; \$120. Johanna Etolia, calved May 24, 1909; J. A. Scharen, Creswell; \$200.

Queen Carrie Clude de Kol, calved October 18, 1910; Donnybrook Farm; \$385.

Helena Wickfield Second de Posch, calved May 25, 1909; Mrs. Hauptert; \$155.

Margaret Fair Oaks, calved August 7, 1915; Hugh Nesbit; \$145. Netherland Pontiac of Green Band calved September 25, 1915; Donnybrook Farm; \$315.

King of Korndyke Mareira, calved March 27, 1916; Charles J. Lee, Alpha, Wash.; \$105.

Leona Hadjo de Kol, calved September 14, 1913; Charles J. Lee; \$205. Miss Edna Segis, calved April 12, 1911; Donnybrook Farm; \$375.

Sunnyside Jessie de Kol Second, calved October 19, 1912; Donnybrook Farm; \$390.

De Kol Artis Clothilde Queen II., calved March 26, 1910; Donnybrook Farm; \$355.

Hollywood Bessie Palmer, calved February 24, 1915; J. V. Lennon, Newberg; \$280.

Nazi Prilly Fobes, calved February 2, 1914; H. C. Davis; \$300.

Jewel Aycanora of Greenbank, calved October 21, 1914; Donnybrook Farm; \$325.

Josephine Cantante Gerben, calved February 22, 1911; Charles Bernard Beaverton; \$180.

Edna de Kol Sir Skylark II., calved May 11, 1909; H. C. Davis; \$190.

Pink of Holstein Home, calved June 9, 1912; Lewis Snider; \$170.

Narcissus of Cherry Hill, calved October 27, 1915; W. Krause, Sherwood, Ore.; \$120.

Gertie Hengerveld de Kol, calved April 25, 1915; Clinton Hurd, Harrisburg, Ore.; \$140.

Lady Belle Wayne II., calved May 10, 1915; Charles Ashton, Tangent; \$125. Heifer calf, born February 6, 1916; Charles Mead, Jr.; \$130.

La Reine Siler Shade Hengerveld; H. C. Davis; \$250.

# GUERNSEYS

## Our Young World Champions are sired by King of Medfield

King of Medfield was the sire of Junior Champion Cow, Reserve Junior Champion Cow and Reserve Senior Champion Bull, at the Panama-Pacific World's Exposition at San Francisco last fall. We are offering some fine young bulls by this great sire out of heavy milking cows at reasonable prices.

CHICONA FARM, Chinook, Wash.  
A. L. Gile, Prop.

### A Rare Opportunity for High Producing Jerseys

I have decided to offer all of the calves that are born this year from my high producing Register of Merit cows, only excepting Olympia's Fern's offspring. Some of these cows are making over 800 lbs. butter, and others have already done so.

#### WHO IS OFFERING HEIFERS FROM 800-POUND COWS?

Look over the advertisements and then you will have to come here to find them.

E. L. Brewer

Satsop, Wash.

## Waikiki Farm

Breeders of

JERSEY and AYRSHIRE CATTLE  
DUROC JERSEY SWINE  
SHROPSHIRE SHEEP

IRA P. WHITNEY, Supt.

Route 7, Spokane, Wash.

### Registered Jerseys

Champion cow at Western Washington Fairs, and herd sire has a good number of Register of Merit sisters. A few youngsters for sale. Write for particulars and prices.

J. H. Taylor  
Montesano, Wash.

### HILLCREST FARM GUERNSEYS

Herd gull is a son of Yeksa Unis, A. R. record 647.75 lbs. fat; his five closest female kin have A. R. records that average 625 lbs. fat. At present offer one yearling bull reasonably priced. Also 17 grade Guernsey heifers.

C. G. HENKEL, Opportunity, Wash.

## PEERADA BERKSHIRES

**SPECIAL BOAR SALE**—Requiring a change of boars, will sacrifice two of our most valuable herd sires. Also offer superb sons of LAUREL CHAMPION, brothers to Grand Champion boar 1916. Utah State Fair. Also choicest weanling boars and gilts.

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I am offering three grandsons of Eminent ranging in age from four months to one year. They are out of Register of Merit cows with good records and breeding. Prices from \$75 to \$125. Write for further information.

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**Grade up with a Jersey Bull!** He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

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The American Jersey Cattle Club  
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### Holstens for Sale

A carload of well-bred, high-grade Holstein heifers, also 20 steers. For further particulars and prices address

H. S. ROYCE  
Eatonville, Wash.



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HEREFORDS-JERSEYS  
BARRED ROCKS  
SILVER BIRCH FARMS  
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from the West's greatest Berkshire herd, is now ready for mailing. Every animal described and priced. Some exceptional bargains in service boars and open gilts. Write today for this price list.

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Everything needed in building, and you pay the LOWEST net prices. We guarantee prompt shipments everywhere. Just a few Rovig prices follow:

Cross Panel Doors .....\$1.25  
Front doors, any style, from....\$3.00  
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Prices on application.

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Corvallis, Oregon



## POULTRY

### HIGH QUALITY AT SEATTLE

Seattle is coming into its own as a poultry show town. Fanciers have always looked upon this city as the logical location for one of the best shows in the West, but somehow it did not always make the most of this opportunity.

This year, however, the new Seattle Poultry and Pet Stock Association put on what is conceded to be one of the highest class exhibits ever staged on the Pacific Coast, the quality here averaging higher than the Panama-Pacific show. Judge Jas. A. Tucker, of Royal Oak, Mich., did not hesitate to say that it was one of the best shows he ever got into, and W. M. Coats said that it was the first show he ever judged that was so good that he could not find a disqualified bird.

The Barred Rock class was the outstanding class of the show, although the Reds were a bunch that were hard to beat. An unusually large class of Minorcas was shown and the turkey section held one of the best exhibits seen in this part of the country.

This show brought together more of the older fanciers of Western Washington and Oregon than are usually seen here, and this probably explains the uniformly high quality of the stock. Among the prominent Barred Rock breeders here were M. J. Myers, of Portland; Kegley Bros., of Little Rock; A. D. Cowan and Antonsen Bros., of Seattle; L. D. Elliott, of Portland, was in the Red winnings, other exhibitors here being W. G. King, of Everett; Geo. Brewer and Jack Morris, of Seattle, and A. R. Graves, of Orcas. Harry Hoyt, H. Rringhouse, J. A. Griffith and R. R. Newton were among the older White Wyandotte breeders here.

The awards follow:

**Barred Plymouth Rocks**—Cocks: M. J. Myers, 1; Kelley Bros., 4; J. E. Bonnell, 3; Oregon Carneau Co., 5. Cockerels: Antonsen Bros., 1; E. J. McClanahan, 2, 3; E. F. Wheeler, 4; Kegley Bros., 5. Hens: Antonsen Bros., 1, 5; Kegley Bros., 2; M. J. Myers, 3; E. F. Wheeler, 4. Pullets: Kegley Bros., 1; Antonsen Bros., 2; M. J. Myers, 3; J. E. Bonnell, 4; E. F. Wheeler, 5. Pullets and Bred Cocks: Kegley Bros., 1; W. H. Kruppe, 2; A. D. Cowan, 3. Pullet Bred Cockerels: Kegley Bros., 1, 2, 3; A. D. Cowan, 4; P. McCormack, 5. Pullet Bred Old Hens: M. J. Myers, 1; Kegley Bros., 2; A. D. Cowan, 3. Pullet Bred Young Hens: Kegley Bros., 1; M. J. Myers, 2; A. D. Cowan, 3. Cockerel Bred Hens: Antonsen Bros., 1; Oregon Carneau Co., 2, 4; M. J. Myers, 3. Cockerel Bred Pullets: Joe Cardano, 1; Antonsen Bros., 2; M. J. Myers, 3; E. F. Wheeler, 4; A. D. Cowan, 5. Cockerel Bred Old Hens: M. J. Myers, 1. Cockerel Bred Young Pens: A. D. Cowan, 1; Oregon Carneau Co., 2; M. J. Myers, 3; E. F. Wheeler, 4.

**White Plymouth Rocks**—Cocks: J. W. Shearer, 1; E. D. Schanen, 2; A. A. Giersch, 2. Cockerels: Geo. A. Washburn, 1; A. A. Giersch, 2; E. D. Schanen, 3. Hens: A. A. Giersch, 1; Geo. A. Washburn, 2; E. D. Schanen, 3. Pullets: A. A. Giersch, 1; E. D. Schanen, 2. Old Pens: A. A. Giersch, 1.

**Buff Plymouth Rocks**—Cocks: Harry Collier, 1; G. E. Paton, 2. Cockerels: Geo. A. Washburn, 1; A. A. Giersch, 2; E. D. Schanen, 3. Hens: A. A. Giersch, 1; Geo. A. Washburn, 2; E. D. Schanen, 3. Pullets: A. A. Giersch, 1; E. D. Schanen, 2. Old Pen: A. A. Giersch, 1.

**Buff Plymouth Rocks**—Cocks: Harry Collier, 1; G. E. Paton, 2. Cockerels: G. E. Paton, 1, 2, 5; Harry Collier, 3; Firecrest Poultry Yards, 4; Hens: G. E. Paton, 1; Firecrest Poultry Yards, 2; X. L. C. R. Farm, 3. Pullets: G. E. Paton, 1, 2; Firecrest Poultry Farm, 3, 4; A. J. Standord, 5. Old Pen: X. L. C. R. Poultry Farm, 1.

**Silver Laced Wyandottes**—Cocks: H. W. Domes, 1. Cockerels: X. L. C. R. Poultry Ranch, 1, 2, 3. Hens: X. L. C. R. Ranch, 1, 3, 4; H. W. Domes, 2. Pullets: H. W. Domes, 1, 5; X. L. C. R. Ranch, 2, 3, 4. Old Pens: X. L. C. R. Farm, 1, 3; H. W. Domes, 2. Young Pens: X. L. C. R. Ranch, 1, 3; H. W. Domes, 2.

**Golden Laced Wyandottes**—Cockerels: H. W. Domes, 1; Geo. B. Spaulding, 2. Hen: George B. Spaulding, 1. Pullet: Geo. B. Spaulding, 1; H. W. Domes, 2, 3. Young Pen: H. W. Domes, 1.

**Partridge Wyandottes**—H. W. Domes, all awards.

**Silver Pencilled Wyandottes**—H. W. Domes, all awards.

**Buff Wyandottes**—Cock: Fred A. Johnson, 1. Hen: Fred A. Johnson, 1, 3. Pullet: X. L. C. R. Ranch, 2.

**White Wyandottes**—Cock: J. A. Griffin, 1, 2; Washington Poultry Farm, 3; R. R. Newton, 4; X. L. C. R. Ranch, 5. Cockerels: H. Ringhouse, 1, 2, 4, 5; Harry Hoyt, 3. Hens: J. A. Griffin, 1; R. R. Newton, 2; Washington Poultry Farm, 3; W. R. Miller, 4; X. L. C. R. Ranch, 5. Pullets: J. A. Griffin, 1; Harry Hoyt, 2, 3; H. Ringhouse, 4, 5. Old Pens: Washington Poultry Farm, 1; Thomas Horn, 2. Young Pens: Harry Hoyt, 1.

**Single Comb Rhode Island Reds**—Cockerels: Jack Morris, 4; Hill's Poultry Farm, 5; L. D. Elliott, 1; A. R. Graves, 2; W. G. King, 3. Cockerels: William Matthews, 1, 3, 5; Fred Vess, 2; A. R. Graves, 4. Hens: W. G. King, 1; A. R. Graves, 2, 4; William Matthews, 3; L. D. Elliott, 5. Pullets: W. G. King, 1; A. R. Graves, 2; Jack Morris, 3; Hill's Poultry Farm, 4; W. M. Matthews, 5. Old Pens: W. G. King, 1; Geo. W. Brewer, 2. Young Pens: Geo. W. Brewer, 1; Hill's Poultry Farm, 2; W. G. King, 3; William Matthews, 5; A. R. Graves, 4.

**Rose Comb Rhode Island Reds**—Cocks: A. R. Graves, 1; Depner and Son, 2; Davis & Son, 3. Cockerels: Davis & Son, 1; Nelson Farm, 2. Pullets: Davis & Son, 1; Nelson Farm, 2; A. R. Graves, 3, 4. Old Pens: Depner & Son, 1. Young Pen: Davis & Son, 1; A. R. Graves, 2.

**Dominiques**—Cocks: Mrs. Ella Plank, Cockerel; Sunlit Dominique Yards, 1, 5; R. R. Richardson, 2, 3; Mrs. Ella Plank, 4. Hens: Mrs. Ella Plank, 1; Sunlit Dominique Yards, 3; R. R. Richardson, 2. Pullet: Sunlit Dominique Yards, 1, 2; R. R. Richardson, 3; Mrs. Ella Plank, 4.

**Light Brahams**—Charles Bysema, all awards.

**Brown Leghorns**—Cocks: Fred A. Johnson, 1, 2, 3. Cockerels: Fred A. Johnson, 1; Miller Bros., 2; Ira A. Parkhurst, 3. Hens: Fred A. Johnson, 1, 2; Miller Bros., 3. Pullet: Fred A. Johnson, 1; Miller Bros., 2, 3. Old Pen: Ira A. Parkhurst, 1. Young Pens: Ira A. Parkhurst, 1.

**Rose Comb Brown Leghorns**—Fred A. Johnson, all awards.

**Single Comb White Leghorns**—Cocks: McKenna Park Poultry Farm, 4; R. R. Upper, 1, 2, 3, 5. Cockerels: J. P. Hall, 1; Fish Bros., 2, 3, 4; C. J. Melby, 5. Hens: Fish Bros., 1, 2; W. J. Moore, 3; C. J. Melby, 4; R. R. Upper, 5. Pullets: Miller Bros., 1; C. J. Melby, 2, 5; Fish Bros., 3, 4. Young Pens: Fish Bros., 1, 3; Mount Angel College, 2; Alex Campbell, 4.

**Buff Leghorns**—Cocks: Rose Crest Poultry Farm, 1, 3; W. J. Moore, 2, 4; Mrs. F. J. Harrison, 5. Cockerels: Rose Crest Poultry Farm, 1, 2; A. D. Larsen, 3, 5; Mrs. F. J. Harrison, 4. Hens: Mrs. F. J. Harrison, 1, 2, 3; Rose Crest Poultry Farm, 4; W. J. Moore, 5. Pullets: Mrs. F. L. Harrison, 1, 2, 3; A. D. Larsen, 4; Rose Crest Poultry Farm, 5. Young Pens: Rose Crest Poultry Farm, 1; Mrs. F. J. Harrison, 2; W. J. Moore, 3.

**Black Minorcas**—Cocks: Dreimie Nook Poultry Yards, 1; Louis J. Bouchard, 2. Cockerels: Louis J. Bouchard, 1, 2, 3, 4; Dreimie Nook Poultry Yards, 5. Hens: Louis J. Bouchard, 1, 3, 4, 5; Dreimie Nook Poultry Yards, 2. Pullets: Dreimie Nook Poultry Yards, 1; Louis J. Bouchard, 2, 3, 4, 5. Old Pens: R. G. McGuire, 1; Louis J. Bouchard, 2. Young Pens: Louis J. Bouchard, 1, 2; Dreimie Nook Poultry Farm, 3; R. G. McGuire, 4.

**Black Minorcas**—Peerless Poultry Yards, all awards.

**White Minorcas**—K. B. Kiser, all awards.

**Black Minorcas**—Mrs. E. F. Ewalt, all awards.

**Buff Minorcas**—L. O. Lukan, all awards.

**S. C. Anconas**—Cocks: Short's Ancona Yards, 1; G. C. Jazek, 2; Ira N. DeLine, 3. Cockerels: Short's Ancona Yards, 1, 4, 5; Ira N. DeLine, 2, 3. Hens: Short's Ancona Yards, 1, 2, 4; G. C. Jazek, 3. Pullets: Short's Ancona Yards, 1, 4; Mrs. C. Wooten, 2, 3; G. C. Jazek, 5. Young Pen: Short's Ancona Yards, 1; Mrs. C. Wooten, 2; T. D. Rockwell, 3.

**Anconas**—G. C. Jazek, all awards.

**Buff Orpingtons**—Cocks: J. C. MacGinnitie, 1, 3; James Northern, 2; Lucy R. Scudder, 4; Mrs. Frank Carter, 5. Cockerels: J. White & Son, 1; Lucy Scudder, 2, 3, 4, 5. Hens: Lucy R. Scudder, 1, 3; Sharpe-Dodge, 2; Mrs. J. Wright, 4; J. C. MacGinnitie, 5. Pullets: J. C. MacGinnitie, 1; Lucy R. Scudder, 2, 4; Mrs. J. Wright, 3, 5. Old Pens: X. L. C. R. Yards, 1. Young Pens: Lucy R. Scudder, 1; X. L. C. R. Yards, 2; Sharpe-Dodge, 3, 4, 5.

**Black Orpington**—Cockerel: J. L. Craib, 1. Pullet: J. L. Craib, 1, 2. Old Pen: Mrs. S. H. Johnstone, 1.

**White Orpington**—Cocks: E. R. Ninman, 3; Ray Sheldon, 1; G. A. Churchill, 2, 4. Cockerels: E. R. Ninman, 1, 3; Ray Sheldon, 4, 5; G. A. Churchill, 2. Hens: G. A. Churchill, 1, 2, 4; E. R. Ninman, 3; Ray Sheldon, 5. Pullets: E. R. Ninman, 1; G. A. Churchill, 2, 3, 4; Ray Sheldon, 5. Young Pen: Mrs. S. H. Johnstone, 1.

**Red Sussex**—J. F. Zimmerla, all awards.

**Speckled Sussex**—D. R. Molsy, all awards.

**Dark Cornish**—Cocks: Northold Inn, 1; Robert A. Lee, 3, 5; W. B. Pech-

heimer, 2; Mrs. W. H. Warrens, 1. Cockerels: Henry Weisborn, 1; Robert A. Lee, 2, 5; Fred Belcher, 4. Pullets: Robert A. Lee, 1, 3; Mrs. W. H. Warrens, 2; Northold Inn, 4. Young Pens: Northold Inn, 1; Fred Belcher, 2.

**Buttercups**—Cocks: C. W. Brewster, 1, 2. Cockerels: C. W. Brewster, 1, 3; Mrs. E. Pickering, 2. Pullets: Mrs. E. Pickering, 1; C. W. Brewster, 2, 3.

**Blue Andalusian**—Fred W. Seigel, all awards.

**Bronze Turkeys**—Young Pens: Peerless Ranch, 1. Old Pens: Peerless, 1. Adult Tom: Cowley, 1. Yearling Cockerel: C. H. Burnett, 1; Peerless Ranch, 2. Cockerel: Peerless Ranch, 1, 2, 3; Harry Collier, 4; G. C. L. Schwartz, 5. Hen: Mrs. James Wright, 1; G. C. L. Schwartz, 2, 3; Cowley, 4, 5. Pullet: Mrs. James Wright, 1, 2; Peerless Ranch, 3, 4, 5.

### A WINTER RATION.

The following ration is that fed to the fowls entered in the All-Northwest Egg Laying Contest; 1116 fowls are fed this ration and the cost averages \$2.00 per bird per year.

Grains: Equal parts by weight of cracked corn and wheat fed in deep straw litter at 3:30 p. m. daily, 10 pounds to 100 fowls. Oats, weighed dry, then sprouted  $\frac{1}{2}$  inch, fed at 8:30 a. m. daily;  $7\frac{1}{2}$  pounds to 100 fowls.

Green food: Cabbage, 7:00 a. m. daily; 8 pounds to 100 fowls.

Grit, oyster shell and dry mash at all hours.

Dry mash: 100 pounds each of bran, ground wheat, ground oats, corn meal; 50 pounds each of beef and fish scrap; 20 pounds charcoal.

Tuesday, Thursday, Saturday, moist mash consisting of equal parts by weight of the dry mash (with fish and beef scrap omitted) and green cut bone. Every 100 birds averaged weekly nearly 50 pounds wet and dry mash.

### HOGAN SCORES TABULATED.

The work of tabulating the Hogan scores of the birds entered in the All Northwest Egg Laying Contest is completed and shows that if the hens are kept in good condition they will average 153.11 eggs. This is .3 egg more than the average for each hen

in the Missouri Valley Egg Laying Contest covering a period of five years. Oregon Agricultural College's entries in the All-Northwest Egg Laying Contest up to date have tied with other contestants for second and third places in the individual egg records.

**BIGGER BETTER AND MORE CHICKS WITH A BUCKEYE INCUBATOR**

You keep the Lamp burning, Turn the Eggs—that's all The "Buckeye" will hatch every Hatchable Egg. No experience necessary Ask for Catalog No. 52

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**WHITE LEGHORNS COCKERELS** PEDIGREED FOR EGGS

Their dams have records of 200 to 257 eggs in 365 days.

We solicit your patronage for Hatching Eggs, Day-Old Chicks, Breeding Stock. Write for circular giving prices and egg records.

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**Lilly's EGG MASH**

100 LBS. **Lilly's HIGH PROTEIN EGG MASH**

MANUFACTURED BY THE CHAS. H. LILLY CO. SEATTLE, PORTLAND

This high protein Egg Mash produces eggs in abundance. It is very high in protein, contains no condiments or other injurious things, and is extremely rich in animal foods and other meats. If you feed Lilly's Egg Mash with scratch food, greens, grit, shell and water, NO MEAT, your hens will then lay plentifully.

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**USE LILLY'S FOODS ALL THE TIME**

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6-YEAR POINTS THE WAY START RIGHT YOU END RIGHT

any person in the world to hatch one egg the Magic Egg Tester registers unhatchable before incubation. 2d. We challenge anyone to produce evidence of one 200 egg layer that was not hatched from an egg rated good by the Magic Egg Tester. It is a sure loss to take a chance on weak eggs. Unimpeachable testimonials. You save and make money when the Magic Egg Tester picks out the eggs for hatching. Don't use weak eggs. It kills the profits, and nearly kills you. This device also helps to regulate moisture. Price \$2.00 and no expense to use.

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KEYSTONE DAIRY FEED PRODUCE MILK

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TACOMA, WASHINGTON



## THE HOME

### FOODS THAT GO TOGETHER.

Some foods are high in only one kind of food material and so serve only one or possibly two bodily needs. They may be good foods, but should be combined with other foods to make a balanced meal.

With BEEF serve as follows:

Beef steak: Fried onions, French fried potatoes, mushrooms, string beans, stewed carrots. Roast beef: mashed, creamed, roast or sweet potatoes, corn, tomatoes, carrots, cabbage, or greens. Pot roast or boiled beef: Cream horseradish sauce, boiled potatoes, stewed tomatoes, cabbage.

With VEAL serve:

Veal roast: Tomato sauce, peas, rice balls, asparagus, spinach, white or sweet potatoes. Stewed veal: Dumplings, baked potatoes or tomatoes. Veal loaf: Rice, peas, asparagus, scalloped or sweet potatoes.

With PORK serve: Apple sauce, sour jelly, sweet potatoes, squash, kale, spinach, corn, beets. Fresh pork: Apple sauce, boiled potatoes, squash, kale, spinach.

With MUTTON serve:

Leg of mutton: Caper or mint sauce, cabbage, creamed turnips, boiled rice. Mutton chops: Creamed potatoes, peas, tomato sauce. Lamb: Mint sauce, cucumbers, white or sweet potatoes, squash, parsnips, egg plant, peas or asparagus tips.

With POULTRY OR GAME serve white or sweet potatoes, squash, rice, peas, asparagus, mushrooms, celery or cucumbers, cranberry sauce, apple sauce, currant jelly.

With FISH serve any of the common vegetables.

Edna E. Walker, Home Economics Specialist, Extension Service, State College of Washington.

### BAKED HAM.

Soak two slices of ham for two hours. Then place one slice of ham in a baking dish, cover it with slices of potato, salt and pepper, then add the other slice of ham and more potato. Pour in milk to the top of last addition of potatoes, put in the oven and bake.

### CURING MEATS.

It is essential to starve the animal to be killed for 24 hours previous to killing, allowing it all the water it wants to drink. The animal must not be excited. The best method of killing beef cattle is felling with an axe between the eyes and sticking below breast bone with knife, or shooting, aiming at the center of the forehead between the eyes.

Calves may be felled. Hogs may be killed by sticking. Sheep and goats should have their throats cut and the neck broken.

#### Curing.

There are two methods in curing—dry salt and sugar cure. Dry salting is best for hot weather and for preserving small pieces of meat without smoking. Use 16 lbs. salt, 4 lbs.

sugar, 6 oz. saltpeter per 100 lbs. meat. Rub this into meat every other day for a week. Afterwards once a week is enough. After each rubbing cover meat with the salt mixture. Two weeks should be enough for bacon and five or six weeks for hams.

The sugar cure: Let the meat cool for a day, then rub a mixture of one part brown sugar to four parts salt into it. Let it lie a day. Then pack into barrel and weight the meat down. Make a brine of 16 lbs. fine dairy salt, 4 lbs. sugar or molasses, and if you wish 6 oz. salt peter per 100 lbs. meat. Put enough water into this to float an egg. Pour brine into barrel. After meat has been in brine one week reverse it side for side in the barrel. In two weeks the smaller pieces will be ready. The larger ones take five or six weeks.

Smoking: Apple wood, juniper and corn cobs are good for smoking. Use a wood that does not contain resin. Hang the meat in smoke house and build fire under it. After a week take it out and hang up. Do not let water touch smoked meat.

### By-Products.

Pork sausage, hamburger, liver sausage, head cheese, pickled pigs feet, bologna, wieners, frankfurters, bockwurst, summer sausage, lard, tripe, etc., are all by-products that make valuable additions to the home larder.

### Slaughtering Tools.

The tools necessary for the farm slaughter house are: 2 skinning knives, 1 sticking knife, 1 straight butcher knife, 1 steak knife, 1 steel, 1 meat saw, 1 4-lb. cleaver.

### FRIED SALT PORK.

Cut fat salt pork in thin slices and soak in milk for a few hours. Pour boiling water over, drain, and fry until crisp. When partly fried they may be dipped into batter, then finished in the same pan, turning several times.

The High School domestic science class of Hillyard, under the direction of Grace Baker, a State College of Washington graduate of 1915, won the first prize at the National Apple Show in Spokane in the apple-pie baking contest. The Spokane High Schools took second and third prizes.

### WHAT I LIVE FOR.

I live for those who love me,  
Whose hearts are kind and true,  
For the heaven that smiles above me,  
And awaits my spirit, too;  
For all human ties that bind me,  
For the task by God assigned me,  
For the bright hopes left behind me,  
And the good that I can do.

I live to learn their story,  
Who suffered for my sake,  
To emulate their glory,  
And follow in their wake;  
Bards, patriots, martyrs, sages,  
The noble of all ages,  
Whose deeds crown history's pages,  
And time's great volume make.

I live to hold communion  
With all that is divine,  
To feel there is a union  
'Twixt nature's heart and mine;  
To profit by affliction,  
Reap truths from fields of fiction,  
Grow wiser from conviction,  
And fulfill each grand design.

I live to hail that season  
By gifted minds foretold,  
When man shall live by reason,  
And not alone by gold;  
When man to man united,  
And every wrong thing righted,  
The whole world shall be lighted  
As Eden was of old.

I live for those who love me;  
For those who know me true,  
For the heaven that smiles above me,  
And awaits my spirit, too;  
For the cause that lacks assistance,  
For the wrong that needs resistance,  
For the future in the distance,  
And the good that I can do.

—Selected.

## The gift that cheers

For Xmas—or any other time—there's nothing more pleasing or useful than a good oil heater. Nine hours of solid comfort from a gallon of PEARL OIL. Good-looking, dependable, durable.

Prices: \$3.75 to \$7.75

## Perfection Oil Heater

Dealers Everywhere

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(California)

For best results use  
PEARL OIL



Increase Your Egg Production 25 to 100 Per Cent

by using our Air-O-Lite Gasoline Lantern in your chicken houses. We handle mantels and repairs for Gasoline Lamps and Lanterns.

Write for Prices.  
BEN OLSON CO.  
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Tacoma, Wash.



## Indoor Closet

More Comfortable, Healthful, Convenient

Eliminates the out-door privy, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

**ABSOLUTELY ODORLESS**  
Put It Anywhere In The House  
The germs are killed by a chemical process in water in the container, which you empty once a month. Absolutely no odor. No more trouble to empty than ashes. Closet absolutely guaranteed. Write for full description and price.  
ROWE SANITARY MFG CO 1648 ROWE BLDG., DETROIT, MICH.  
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

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## PEAR BLIGHT RESISTANCE

Concluded

Up to the present time these trees have done very well. Whether they will be permanently successful on this stock is a question which cannot be answered at the present time. In some of the Eastern States, particularly New York, most of the trees top-worked on Kieffer have not been a success, apparently making a weak union at the graft. This may be due to the fact that the Kieffer is quite distinct from our common commercial varieties in habit of growth. It is a cross between the Chinese Sand Pear and the Bartlett, and begins growth considerably earlier in the spring than our commercial varieties. It is hoped that the trees already on the Kieffer here on the Coast will be permanently successful.

At the Southern Oregon Experiment Station we are making an exhaustive study of varieties and types of pears to determine the best for top-working purposes. We have collected some five hundred varieties, and thirty species of pears from this country, Europe, Asia, and Africa to be used in a study of this matter. This work is yielding some valuable results, and I wish to call attention to some of the most important of these.

Two varieties which have shown considerable resistance to blight are Surprise and Orel 15. We obtained propagating wood of the Surprise from the Horticultural Department of the Missouri Experiment Station. There two large trees of this variety have never shown any blight while other varieties of pears in the same orchard surrounding these trees have suffered severely from blight, many of them have blighted to the ground. During 1915, many inoculations were made into this variety. When inoculations were made into the tips of tender young shoots, they would blight back for a distance of only three to four inches. Inoculations made into the trunks of two year old trees failed to develop the disease. The season of 1916 proved very favorable for the development of pear blight, and hence was ideal for testing the blight resisting qualities of this variety. A large number of inoculations were made into the trunks of one and two year old trees on several different dates. Many of these inoculations failed entirely, while many produced small superficial cankers in which the disease soon died, and then these wounds would heal over perfectly. In two trees rather large wounds were produced. These, however, soon healed over. Check trees of many other varieties and types inoculated at the same time and in the same manner and with the same lots of bacteria were killed by the disease.

Orel 15 is a variety which the late Prof. J. L. Budd, of the Iowa Agricultural College, introduced from Russia about 1880. In Iowa trees of this variety have suffered very little from pear blight. During 1915 numerous inoculations into the trunks of one and two year old trees failed to develop the disease. The tips of vigorous shoots, when inoculated, would blight back for a distance of from three to five inches. During 1916 a large number of one year old trees were inoculated at ten places on each trunk. Nearly all of these inoculations were successful, and produced small cankers. These cankers soon dried up, new tissue formed underneath the dead bark, and the cankers healed over before the end of the season. On two small trees some of the cankers encircled the trees, and killed that portion of the tree above these cankers. This variety belongs to the same species to which our cultivated varieties belong, and should prove valuable as a blight resistant stock for top-working.

It should be stated that in all this work the conditions for the development of blight in these trees have been made as favorable as possible. They were grown on exceptionally fertile soil, and were repeatedly and abundantly irrigated, and very thoroughly cultivated. These trees have therefore been extremely vigorous, a condition conducive to blight.

Furthermore, check trees of such varieties as Bartlett, Howell, and Forelle were inoculated at the same time and in the same manner and under the same conditions, and with the same lots of bacteria. In every instance these have blighted very vigorously, both in the younger branches and in the trunks. The trunk inoculations in these varieties have usually completely encircled, girdled and killed the trees.

At the present time we are recommending the Surprise and Orel 15, for the trunk and the main frame-work to be top-grafted with the desired commercial variety. These should be budded or grafted unto some blight resistant root system. It is possible that as our work progresses we may find other varieties which may prove just as good or even better than Surprise and Orel 15. **Stocks for Root System.**

A blight resistant root system is just as essential as a blight resistant trunk. In Oregon and in parts of California pear blight is just as bad on the root system as on the trunk. All of our older pear orchards are on the French Seedling pear roots, *Pyrus communis*. These are particularly susceptible to this disease. Under conditions similar to ours this stock should not be used. What stock will eventually be used under such conditions is a difficult question to answer. At the present time the best stock available, considered from the standpoint of blight resistance, is the Sand Pear, or Japan Pear, *Pyrus sinensis*. During the summer of 1915 we inoculated the roots of a number of seedlings of these two stocks. The French pear seedlings readily developed the disease, and all of them were dead by the end of the season. None of the Japan seedlings showed a trace of the disease. The roots of the Japan pear seedlings appear to be more resistant to pear blight than the tops. During 1915 and 1916 numerous inoculations into the branches and trunks of young trees of this species produced the disease. Some of the two year old trees were completely girdled. In all of these infections only one case extended into the roots.

It is unfortunate that only two species of *Pyrus* have been thoroughly tested as stocks for our pears. There are many other species of pears in Europe, Asia, and Northern Africa; and some of these may prove desirable as stocks for our cultivated pears. We have most of these species in our collection at the Southern Oregon Experiment Station, and these are being tested for blight resistance. Most of these have proved very susceptible to the disease. The following four have shown a marked degree of resistance.

*Pyrus ussuriensis*, Maxim. This species appears to be immune to pear blight, at least under the conditions in Southern Oregon.

The season of 1916 has been a favorable one for the development of pear blight. The disease has been unusually severe in many of the orchards, causing the loss of many trees. During this season, young vigorous trees of this species have been inoculated 210 times on eight different dates. One hundred and five of these inoculations were made in the tips of young vigorous growing shoots. 85 in branches less than one year old, and 20 in the trunk of a two year old tree.

Not a single case of blight developed in any of these. Check trees of many of the other species and varieties inoculated at the same time, in the same manner, and with the same lots of bacteria, blighted vigorously. This is the only species which so far has proved immune in our work. It is a native of Northern China, Manchuria, and Eastern Siberia, and withstands lower temperatures than any other known species of *Pyrus*. In its native habitat the trees attain a very large size, often reaching eighty feet in height, and three feet in diameter. Whether this will be a desirable stock for our cultivated American varieties, in the mild climate of the Pacific Coast remains to be determined. We have grafted and budded this successfully onto our cultivated varieties, and have budded our cultivated varieties onto it. However, it will require a number of years to determine conclusively its value as a stock for our cultivated varieties of *Pyrus communis*. If this should make a congenial stock for these varieties it will be very valuable because of its ability to resist blight.

Unfortunately this species has been confused by some writers with the Chinese Sand Pear, commonly known as *Pyrus sinensis*, Lindl. These two species are distinct, and can be easily distinguished. *Pyrus ussuriensis* bears roundish or slightly flattened fruit, which has a short stalk and a persistent calyx; and comparatively short and broad leaves, the margins of which have minute serrations, and very long slender bristles. *Pyrus sinensis* bears roundish or pear shaped fruits, with a long stalk, a deciduous calyx; and long leaves, with margins coarsely serrate, and often bristly. A number of the Japanese nurseries list *Pyrus ussuriensis*, but all of these forms which I have seen are simply *Pyrus sinensis*.

**Introduction of *Pyrus ussuriensis*:** So far as I can determine large trees of this species are rare in this country. Since 1905 it has been sent to this country several times by Mr. F. N. Meyer, Agricultural Explorer of the U. S. Department of Agriculture. Mr. Meyer's introduction B. P. I. number 21,880 is a typical form of this species.

In the Report of the Iowa Horticultural Society for 1912 Mr. Charles G. Patten, of Charles City, Iowa, called attention to a Chinese Sand Pear which he has used in some of his breeding work. He states that in 1880 Mr. O. A. Bardhall, of Grundy Center, Iowa, purchased a tree of the Chinese Sand Pear from John S. Collins & Sons, of New Jersey, which was purported to bear fruit nearly as large as the Flemish Beauty. When it came into bearing the fruit proved small, hard and worthless. Mr. Patten propagated a tree from this because it had proved its great hardiness during the severe Iowa winter of 1883-84. Mr. Patton states that his tree at Charles City, Iowa, has never been injured in the least by cold and has never blighted, since it was planted in 1885.

Since *Pyrus ussuriensis* has proved so remarkably resistant to blight in our work, and as it is the hardiest species of pear known, I thought that possibly Mr. Patten's tree belonged to this species. In reply to a letter Mr. Patten kindly sent me leaves of his tree which I received on November 10 of this year. As the tree had not borne this year no fruit was sent, but Mr. Patten kindly furnished a description of the fruit and stated that the tree probably belonged to *Pyrus sinensis*. An examination of the leaves, however, shows conclusively that this tree belongs to *Pyrus ussuriensis*.

The tree in Iowa is the oldest one in America so far as I have been able to learn. Undoubtedly there are other trees in America just as old or older than the Iowa tree. It is quite probable that Collins & Sons sent out trees of this species other than the one sent to Iowa. I hope that some of these can be located, and the writer would be pleased to receive specimen leaves and fruits of any tree which promises to belong to this species.

*Pyrus calleryana*, Decr. This species is a native of Central and Southern China. It bears small, brownish fruit, with a deciduous calyx. The leaves are of medium-size, very glossy, and the margins possess short, rounded or dentate teeth. The tree is a clean, vigorous, upright grower, with very smooth bark. This species appears to be adapted to a wide range of conditions, being found at elevations ranging from a few feet above sea level to an elevation of 5000 feet. It is often found growing under very adverse soil conditions.

There are several trees of this species at Oroville, California, which have never shown a trace of blight, while other types of pears near them have suffered heavily from the disease. These trees were grown from seed collected in extreme Southern China, and represent the southern type of this species. We have successfully inoculated young, vigorous trees of this type, and in some cases the disease would extend down the branches as much as three feet. It appears to be resistant in wood that is two or more years old.

The type of this species from Central China has shown even greater resistance to blight than that from Southern China. In this type we have been able to produce the disease only in the young wood; in branches one or more years old all of our inoculations have failed. Since it is very seldom that our commercial varieties on the Pacific Coast become infected with be affected by blight when used as a stock. Since this species is a native blight before they are three years old, this species probably would seldom on the mild regions of China, it may prove well suited to the mild climate of the Pacific Coast. This species appears to be congenial to our cultivated types, as the scions unite readily, and the young trees grow vigorously when grafted onto the European varieties.























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